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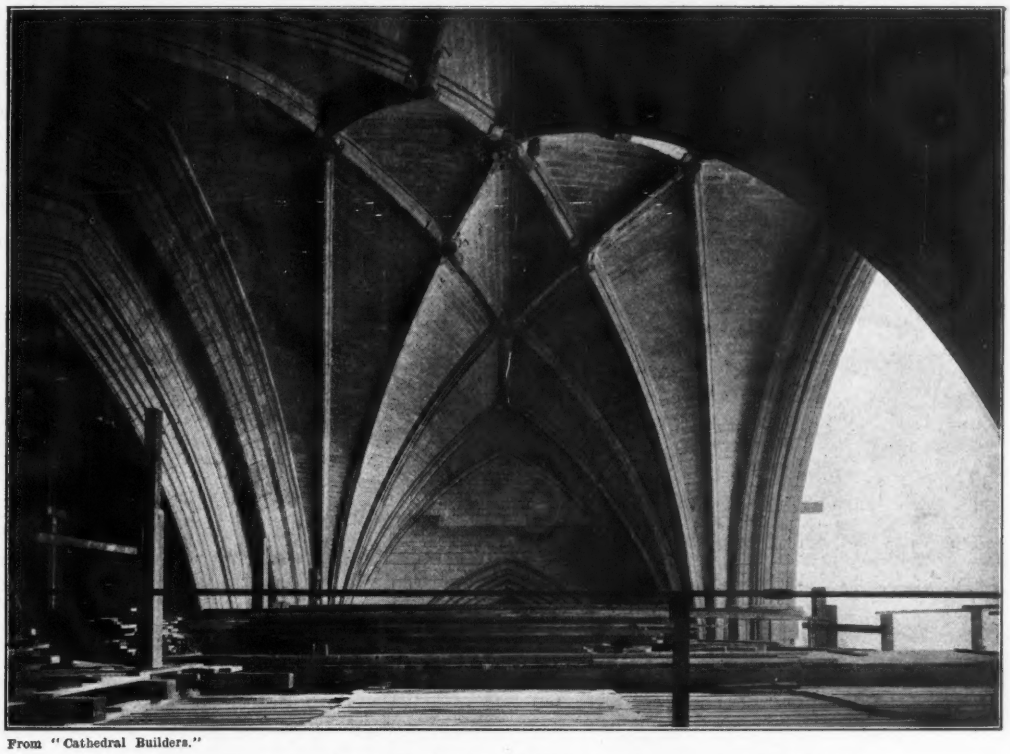


From "Cathedral Builders."

LIVERPOOL CATHEDRAL: THE VAULT OVER THE NEW TRANSEPT CROSSING.

SIR GILES GILBERT SCOTT, R.A., P.R.I.B.A., Architect.

MEETINGS

WEDNESDAY, *September* 12.

Building Exhibition. Opening by Lord Balfour of Burleigh. At Olympia. 4 p.m. The chair will be occupied by Sir Giles Gilbert Scott, R.A., P.R.I.B.A. For details of other meetings at and visits to the Exhibition, see page 396.

MONDAY-FRIDAY, *September* 10-14.

Lighting Service Bureau. Exhibition of Modern Lighting. 2, Savoy Hill, W.C.2.

SATURDAY, *September* 15.

London Society. Visit to Bromley College and Bromley Palace. 3 p.m.

MONDAY-THURSDAY, *September* 17-20.

Association of Public Lighting Engineers. Annual Conference. At Aberdeen.

WEDNESDAY, *September* 19.

The Royal Sanitary Institute. Examinations for Associateship (in General Hygiene and Sanitation) and in Sanitary Science.

FRIDAY-MONDAY, *September* 21-24.

Association of Special Libraries and Information Bureaux. Eleventh Annual Conference. At Somerville College, Oxford.

TUESDAY, *September* 25.

London Society. Coach Drive to Stoke Poges Church and Churchyard. 2 p.m.

THURSDAY-SATURDAY, *September* 27-29.

National Smoke Abatement Society. Sixth Annual Conference. At Glasgow.

THURSDAY-WEDNESDAY, *September* 27-*October* 3.

Garden Cities and Town Planning Association. Study Tour to Holland.

WEDNESDAY-SATURDAY, *October* 3-13.

Institute of Patentees. Tenth International Exhibition of Inventions. At Central Hall, Westminster.

FRIDAY-SUNDAY, *October* 5-7.

Town Planning Institute. Sixteenth Annual Country Meeting. At Birmingham. Friday: Meeting. Saturday: Twenty-first Anniversary Commemoration Dinner.

SATURDAY, *October* 6.

Architectural Association. Mr. G. A. Jellicoe on "Building England: The Countryside." 3 p.m.

SATURDAY, *October* 20.

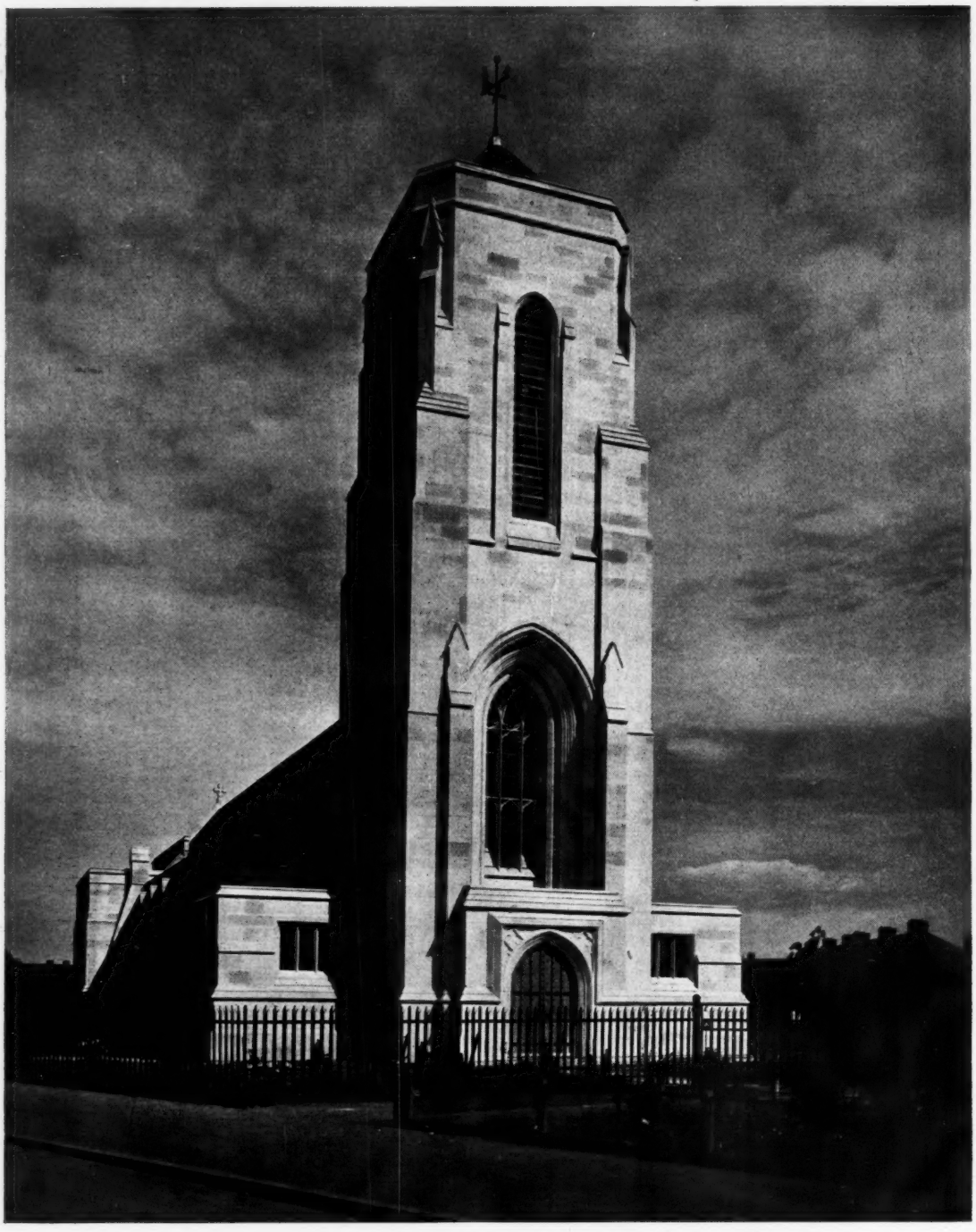
Architectural Association. Hon. Humphrey Pakington on "Building England: The Village." 3 p.m.

TUESDAY, *October* 30.

Architectural Association. Presidential Address by the Hon. Humphrey Pakington. 8 p.m.

THURSDAY-SATURDAY, *November* 29-*December* 1.

Royal Institute of British Architects. Centenary Exhibition. At Portland-place, W. Press View: Thursday, November 29. Private View and Official Opening Ceremony: Friday, November 30. Exhibition open to the public: Saturday, December 1.



CHURCH OF ST. ALBAN, BECONTREE, ESSEX: View from North-West.

MESSRS. MILNER AND CRAZE, L.R.I.B.A., Architects.

A BUREAU OF BUILDING STATISTICS

THE Building Exhibition—to open at Olympia on Wednesday next—is always a major event in the building world. Advance reports indicate that the Exhibition may be the most successful yet, for after the temporary check of the last three years, the constructional machine is gathering way. Architects, contractors and building owners visiting the Exhibition will find displayed many of the improvements—in plant, materials and fittings—which have been made in the last two years. In matters of constructional detail the industry, as ever, will be found to be very much alive.

This biennial "milestone" raises another, and broader, question—that of organisation in the industry. The events of the last fifteen years, if they have proved nothing else, have at least shown that the future welfare of this country is dependent to a very large extent upon thinking and planning ahead. It must now be clear to even the most casual observer that we can no longer with safety maintain an accustomed "easy-going" attitude, whether in regard to politics, art or trade, and that this last channel, especially where building is concerned, is in need of exploration.

It is no secret that until a few years ago the building industry was quite indifferent to the need for organisation. But for the far-sightedness of a group of individuals who realised the danger and formed the Building Industries' National Council, the trade might well be in the perilous position in which the end of 1931 found it. Largely owing to the efforts and propaganda of this Council, the flow of building work is now quickening to what may—should the "paper" plans for slum-clearance get to the bricks-and-mortar stage—become a satisfactory record. General contracting is also on the move; plans for municipal buildings, schools, swimming-baths, factories, cinemas and commercial buildings of all types are being laid, with high probability of their being carried out.

In connection with this flow of work, a gap is revealed in our knowledge. It is the considered opinion of many of the manufacturers of building materials and component parts that the industry is not in a position to take full advantage of this increase in activity. The reason is the absence of complete, accurate and up-to-date statistics of estimated new building work.

Progress in modern industry is dependent upon such statistics. No manufacturer outside the building industry would dare to place a new product on the market without undertaking a very careful survey of the position. Yet it is a fact that to-day the building industry in general is preparing to cope with a huge volume of business without having taken any steps to approximate what that volume will amount to. This state was recently described in an interview with a daily paper by the secretary of the National Federation of Clay Industries as follows: "The main trouble in the brick industry is the way in which the demand fluctuates. It is very difficult for manufacturers to know where they stand. There has been a succession of Governments and changing policies, and it has been almost impossible to predict what would happen next." We suggest that were accurate statistics available, the admittedly difficult business of arriving at a "forward" estimate would be more than halved.

From time to time criticisms reach us of the incompleteness of the statistics published monthly by the *Board of Trade Journal* and the *Ministry of Labour Gazette*. Apart from the Census of Production (the last Report for the 1931 Census has recently made its appearance), the information in these two official publications is all that is available to the building trade. The former gives a monthly estimate of proposed building work based on the returns of 146 towns, and sub-divided under the heads of "dwelling houses" and "other buildings and additions and alterations to existing buildings." This index is not a computation of value, but only an index compared against that of the year 1924. The *Ministry of Labour Gazette* is more detailed, and its figures of building plans approved are presented each month in a more useful form. Figures of the estimated value of proposed building are obtained monthly from 146 authorities. These are then sectionised under five classes of building. Again, the country is divided into ten regions, and separate figures for these areas are available.

It is information on these lines that the building industry needs if continuity in manufacture and a regular scheme of employment is to be achieved, and building operations are not to be held up by sudden shortage of materials caused by an unforeseen demand. There are, approximately, 1,850 local authorities in Great Britain—county, metropolitan and county boroughs, urban and district councils. Why are the statistics we refer to confined to a mere 146 authorities? Is there any reason why difficulties in the way of obtaining complete monthly returns from these 1,850 odd authorities should not be overcome, and the building industry be placed in possession of a reasonably complete computation, month by month, of proposed works? If 146 authorities are able to send in returns, why not the others? Certain assistance would have to be given, notably the establishment of some standard method of estimating the value of plans. In this connection, the method of computing value upon the basis of cubic footage has been suggested. Some method of arriving at the true worth of the statistics would also have to be established, for, quite obviously, by no means all proposed plans get as far as being put into construction. Any of several methods might be adopted for getting at this figure, and it will, in all probability, be found that the difference between estimated and subsequent "actual" figures for building work, expressed as a percentage, will be a constant. Thus the true worth of estimated figures may be arrived at. A great deal of detail would clearly be necessary in formulating a scheme to provide prompt and accurate statistics. Preliminary inquiry among brick, cement, steelwork, metal-window and other manufacturers confirms us in the belief that the desire for such statistics is widespread.

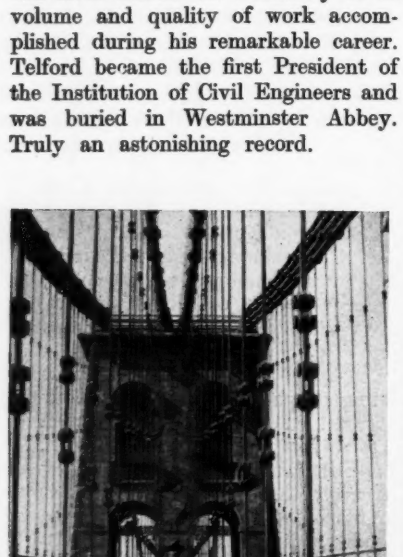
One question of importance remains: In the event of a Bureau of Building Statistics being set up, how shall it be administered? The choice lies between a Government Department, as the Ministry of Health, and a bureau set up by the building industry. Many believe that the industry, through sheer inertia, is allowing too many of its obligations to be shouldered by Governmental bodies. Building Research is a notable instance of this, although, of course, we are in no way criticising the useful and admirable work which is carried on at the Building Research Station under Dr. Stradling. To set up a Bureau under the Building Industries' National Council, which should have the financial support of the industry and the help of the Ministry of Health in obtaining the returns from local authorities, may prove the correct course.

One thing is certain: nothing is likely to be done unless individual members of trades, as well as federations, weigh up the possibilities of such a scheme and make their opinions heard and felt inside and outside the industry. We ourselves believe that a Bureau, such as we have briefly outlined, can be an integral part of the organisation of the building industry. We shall be pleased to receive and to publish the opinions of the trade and its allied professions on the matter.

NOTES

Thomas Telford.

THE centenary of the death of Thomas Telford occurs this week. Born in 1757 at Glendinning, in Eskdale, the son of a shepherd, Telford, who started life as a mason's apprentice in Dumfriesshire, and later worked in London on the construction of Somerset House, became the greatest of British builders of roads and bridges, and had he been born a little later would probably have been as great a railway engineer as George or Robert Stephenson. His most notable work is perhaps the road from Shrewsbury to Holyhead, with its dramatic climax, the suspension bridge over the Menai Straits. He built an extraordinary number of fine stone bridges in different parts of the country, as well as canals (including the Caledonian Canal at a cost of £1,000,000), aqueducts and harbour works, and (like most engineers of his period he was also an architect) two churches in Shropshire. The years about the end of the eighteenth and the beginning of the nineteenth century produced a number of great engineers of extraordinary ability, but not even Rennie can rival Telford in versatility or in volume and quality of work accomplished during his remarkable career. Telford became the first President of the Institution of Civil Engineers and was buried in Westminster Abbey. Truly an astonishing record.



THE MENAI BRIDGE.
Designed by THOMAS TELFORD.

"No need to employ Architects."

"BETTER late than never" is the timely warning to those about to add to or restore our old churches and buildings of historic interest, issued by the Reverend Canon H. K. Fry, hon. secretary to the Bishop of Peterborough's Advisory Committee. Architects, we feel sure, will agree with his following remarks:—"The too common cry 'There is no need to engage an architect' is a mistaken one. Far from adding to the cost, an architect can and often does save expense and controls the contractor. But apart from the question of expense, most of our churches suffer too much already from lack of advice and supervision, from gifts being made (windows, lanterns, reredoses, altar rails, tablets, etc.) without any regard to a general scheme treating the church as a whole. We should all grasp the truth that we are, after all, only trustees, not private owners, and a very grave responsibility is ours. We cannot do as we please with our churches." After a recent holiday tour in the Eastern Counties and a visit to many old churches, we may add it is pitiable to see the condition of many lecterns, altar rails, light fittings and stained glass in many of these churches, and in some cases general neglect and damp caused by choked down pipes.

The Motorist and Noise.

THE success of the experiment of making London within a radius of five miles from Charing Cross a zone of silence between the hours of 11.30 o'clock at night until 7 o'clock the following morning has not only led to an extension of the regulation to the whole of the county, as we hoped it would, but to proposals for abolishing the use of horns and other warning instruments on motor vehicles altogether. Such a suggestion may appear at first sight to go too far, but on reflection it will possibly appeal even to car users themselves, on whom it would place more responsibility for accidents and would do something to reduce the excessive speed at which many cars are driven. The suggestions for the abolition of the use of these warning instruments has received the support of the two great motor manufacturers, Lord Nuffield and Sir Herbert Austin, which in itself is a significant fact and encourages the hope that the good work which is now being done to reduce the excessive and unnecessary noise in our streets—both night and day—may help to reduce accidents which are due in some measure to the use of the motor-horn, which is so necessary to the motorist who desires to travel on our unprotected roads at as high a speed as a steam or electric train on its specially prepared and protected road.

Two Opinions.

LORD NUFFIELD, speaking at a recent meeting, said in Northern Europe one could drive for 30 or 40 miles among large towns without hearing a motor-horn. He was told that the less the noise made by horns the lower was the death-rate. The reason, he thought, was that when a man was told not to "drive on the horn" he became a little more careful. For himself, Lord Nuffield added, he would be very pleased to hear that the whole country was free from motor-horns; he would go farther and say from motor-signals also. When he wanted to turn to the right he first looked round to see what was coming, and that was the only safe way. Sir Herbert Austin, writing on the subject to *The Times*, said: "In matters of this kind, involving the freedom of millions of people, one must be guided to a large extent by what has already been accomplished by, and the experience of, such cities as Helsingfors and Paris, for instance. These show that the elimination of the use of the motor-horn has not only reduced the noise but has also definitely and substantially reduced the accidents, in the case of Helsingfors, by more than 50 per cent. during the last four years. In the case of Paris, the regulation was made in order to reduce noise, and in Helsingfors to reduce accidents." These two weighty opinions can scarcely be ignored, and we may reasonably expect remedial action to follow.

A PRIVATE MEMORIAL AT BEDFORD PARK, W.
Designed by the late MAURICE B. ADAMS, F.R.I.B.A.

Tributes to Ruskin.

THOUGH Ruskin the art critic is to-day largely neglected, Ruskin the political economist and prophet is better read and exerts a greater influence than at any time since his death. The Ruskin Society has done much to spread a knowledge of his work and to keep

A CORNER OF WINCHESTER.

his memory green, and in this connection we have pleasure in acknowledging the receipt of a slim volume entitled "To the Memory of Ruskin,"* containing a number of addresses given by distinguished men at a dinner held at the English-Speaking Union on February 8, 1934, to commemorate Ruskin's birth. Among the speakers was Mr. Eric Gill, who, we think, fairly summed up the great man when he said that although his (Ruskin's) "ideas on art were full of pedantry and false reasoning, as, for instance, when he described architecture as being that kind of building to which some sort of sculpture was added—as though architecture could not exist without sculpture—his ideas on justice and equity, founded less upon idiosyncrasy, are unshakable and permanent." The addresses contained in the book come from men of widely varying views and representing different aspects of the national life, and as the editor of the volume, Mr. J. Howard Whitehouse, President of the Ruskin Society, observes, they form an impressive tribute to the wide appeal that Ruskin makes.

Work at the Middle Temple.

THE Master Treasurer and Benchers of the Middle Temple decided that during the Long Vacation the repairs started in 1922, on the advice of Mr. Clyde Young, should be carried a step further. The work this year is confined to the buildings in Essex-court, which are being dealt with in very much the same way as Pump-court. Defective brickwork is being made sound, many of the window heads taken out and renewed, defective window frames and sashes repaired or renewed and all fronts repointed. The roofs are being stripped and all roof timbers carefully examined, repaired or renewed as necessary, and the gutters relaid with sheet lead. During the Whitsun recess, the south-west corner of No. 2, Essex-court was picked up on a new foundation by means of pressure piles sunk 26 ft. down to the clay. The work to the roofs is being carried out by the Inn's own staff under the direction of Mr. C. G. Swanson, the Middle Temple Surveyor. The contractors for the remainder of the works are Messrs. Dove Brothers, Ltd.

* Cambridge: Printed at the University Press or the Ruskin Society. Price 3/- net.

Great Britain's Trade Prospects.

THAT Great Britain's trade prospects in the immediate future can be viewed with a fair degree of assurance, is the opinion expressed in a summary of the industrial situation which is published in the September issue of Lloyds Bank Monthly Review. "While the deterioration of conditions in many foreign countries naturally causes anxiety, activity in Great Britain," it is stated, "is on the whole being well maintained. There was only a slight increase in unemployment during July, and this is attributable to holiday stoppages in the textile trades and to the entry on the labour market of boys and girls who have just left school. Conditions in the iron, steel and engineering industries remain much better than in previous years." Dealing with the question of general trade indications, it is stated that commodity prices have lately been rising and, while this increase is mainly due to the drought, it suggests that consumption is being well maintained. Bank advances have recently had a slow upward trend, which suggests that industry is now finding uses for additional credit. "To summarise our own position, it is fair to say British trade is keeping up reasonably well. We must, it is true, envisage the contraction of certain of our foreign markets for some time to come, but taking our trade as a whole, both home and overseas, the immediate future can be viewed with a fair degree of assurance."

The Building Trades Exhibition.

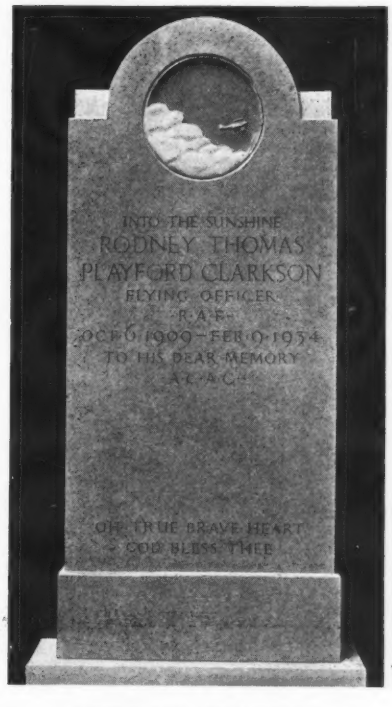
THE 19th exhibition of the present series of Building Trades Exhibitions, which is to be opened on Wednesday next at Olympia by Lord Balfour of Burleigh, promises to be of exceptional interest and importance. The exhibits will be shown in the Grand and National Halls and in the Gallery, and will be fully representative of the appliances and materials used in modern building undertakings, to the production of which our manufacturers and merchants—a large number of whom are exhibiting—have given so much attention. The space occupied by the exhibits is larger, we understand, than in any previous Building Exhibition and will, no doubt, be visited by architects and builders, as on previous occasions, from all over the country. This journal will have three stands—in the Grand Hall, in the National Hall and in the Gallery—where will be found a selection from the designs sent in for "The Builder" "Ideal Village" competition, the assessor of which was Mr. D. Barclay Niven, F.R.I.B.A., and these designs will include three premiated ones.

A Private Memorial at Bedford Park.

THE little memorial which we illustrate on page 370 is in the centre of the lawn at 1, Marlboro-crescent, Bedford Park, W.4. It was designed by the late Maurice B. Adams, F.R.I.B.A., as a memorial to his wife, and now bears his initials on the back, together with those of his wife and two daughters, with an emblem of four hearts. On the front it has "Sunshine and shade by turns, but love always." As seen with its natural surroundings it makes a charming composition.

A Memorial Headstone.

WE are glad to note the movement towards the better treatment of grave headstones, and to find that more of this work is being done by competent artists. We illustrate a headstone to a flying officer, which has just been finished by Mr. Allan Howes. The stone is Hopton Wood, and the circular plaque is of coloured salt glaze, representing an aeroplane above the clouds, the letters being coloured in blue to match the sky in the plaque.



A MEMORIAL HEADSTONE.
By MR. ALLAN HOWES.

GENERAL NEWS

Professional Announcements.

Mr. Edward H. Banks, A.I.A.A., has removed his office to 34, Downlands-road, Purley, Surrey.

Mr. Ernest Bates, F.R.I.B.A., of 27, Queen Victoria-street, E.C.4, has taken into partnership Mr. William G. Sinning, A.I.A.A., who has for some years been associated with the practice. The title of the firm will be Ernest Bates and Wm. G. Sinning.

Mr. Colin S. Day, A.R.I.B.A., has changed his address to 13, Pentley-park, Welwyn Garden City, Herts.

Appointments.

Tendring (Essex) Rural District Council has appointed Mr. S. E. Carroll, M.Inst.C.E., of Tadcaster, as its new Surveyor. There were eighty-one applicants for the position.

Mr. Raymond R. Butler, who has been Principal of the Technical College, Aston, for the past three years, has been appointed as Principal of the Liverpool Central Technical School in succession to Mr. J. Scholes Hague, who is retiring after holding that position since 1914.

Exhibition of Modern Lighting.

An exhibition of modern lighting is being held by the Lighting Service Bureau at 2, Savoy-hill, W.C.2, during the week commencing September 10. On September 13 Mr. R. O. Sutherland, A.R.I.B.A., will be present to explain the latest developments in one particular branch of lighting research.

Chelsea Bridge Reconstruction.

The reconstruction and widening of Chelsea Bridge is to be shortly undertaken by the London County Council, who have received a £311,000 tender from Messrs. Holloway Bros. (London), Ltd., 157, Millbank, S.W.1. The new bridge will carry four lines of traffic.

Building Exhibition and Architecture Club.

Members of the Architecture Club visiting the Building Exhibition will, by the courtesy of the Royal Institute of British Architects, be entitled to use the R.I.B.A. Club at the Exhibition. It is suggested that this will be a useful place at which to meet friends, to rest, send or receive messages, or leave coats and parcels. Refreshments, telephone and other services will be provided. The R.I.B.A. Club will be found on the ground floor of the Main Hall at Olympia, to the right on entering by the Addison-road entrance.

Town Planning Tour to Holland.

The Garden Cities and Town Planning Association is to undertake a study tour to Holland, to take place from September 27-October 3. This is the 19th tour, and the party will leave at 8.30 p.m. on the Thursday for The Hague. Amsterdam, Hilversum and Utrecht will also be visited. Details are available from 3, Gray's Inn-place, Gray's Inn, W.C.1.

The 40-Hour Week.

The conference of the Amalgamated Union of Building Trade Workers at Dorchester has decided to recommend that before accepting any further reductions in the sliding scale the 2d. a week reduction in wages should be restored. A resolution was passed reaffirming the previous decisions of the conference in favour of the 40-hour week without a reduction in the weekly wage rate. The Executive was urged to initiate a campaign explaining the need and desirability of the 40-hour week and to place the demand before the master builders.

The London Pavilion Reconstructed.

The London Pavilion was opened on Wednesday after an extensive scheme of reconstruction which has been completed in the very short time of twelve weeks. The principal alterations are a widening of the auditorium by removing the side promenades, the widening of the stage by twelve feet, the reconstruction of the two circles, and the creation of a more spacious entrance foyer. The seating has been increased by 200 places. A simple but effective scheme of top lighting from a central "saucer" dome flanked by two rectangular recesses has been put in by the architect, Mr F. G. Chancellor, F.R.I.B.A. (Messrs. Frank Matcham and Co.), who has adopted a restrained but charming scheme of greens and brown for his auditorium colourings. The whole work is most pleasing. The reconstruction was carried out by Messrs. F. G. Minter, Ltd.

Appointments Vacant.

Applications are invited for temporary appointments as assistants in the designs branch of the Directorate of Works and Buildings, Air Ministry. Salary £274. Applications to Secretary (S.2), Air Ministry, Adastral House, Kingsway, W.C.2, not later than September 13.

Applications are invited by East Suffolk C.C. for the post of Architectural Assistant (temporary). Salary £200. Applications by September 19 to the County Architect, County Hall, Ipswich.

Applications are invited from candidates between 21 and 30 years of age who have a good knowledge of building construction, settlement of building accounts, and working up quantities. Salary £175 8s., rising to £297. Applications to Secretary (S.2.c.), Air Ministry, Adastral House, Kingsway, W.C.2, not later than September 15.

Factory Building Statistics.

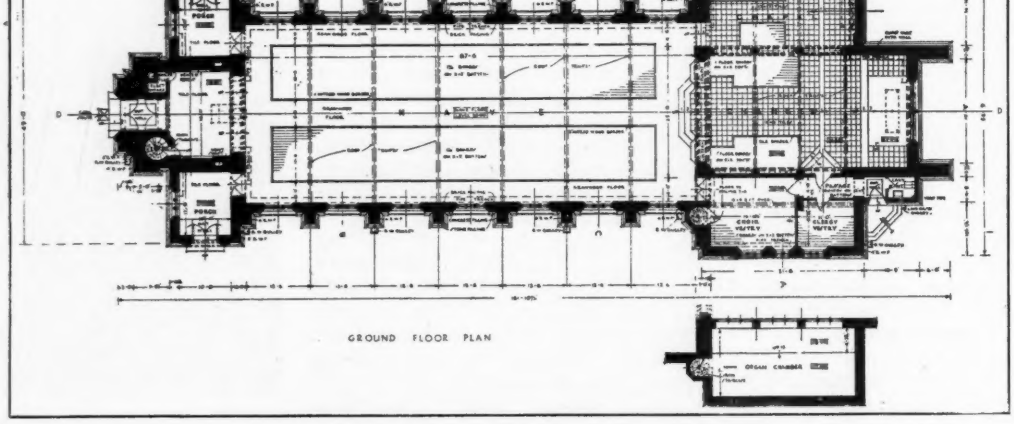
During the first six months of this year, according to reports from 146 local authorities, collated by the Ministry of Labour, there has been a great advance in factory building. Plans were approved, it is stated, for building factories and workshops throughout Great Britain at a total estimated cost of approximately £3,000,000. This compares with a figure of about £1,800,000 for the corresponding period of 1933, an increase of 66⅔ per cent.

Among the new factories now being erected at Welwyn Garden City (states the Welwyn Garden City Information Bureau) is one for Ferramic Industries, Limited. The first unit of the factory is so designed that it can be readily extended to a much larger size. Another new factory now in course of erection at Welwyn Garden City is for the Barnet Comb Company, while five existing factories are in course of extension, being the Film Studio, Beiersdorf, Ltd., A. Buchanan and Sons, Mouldrite, Ltd., and Welwyn Foundry, Ltd.

COMPETITION NEWS

CURRENT COMPETITIONS.

	Particulars published in "Builder."	Sending-in date.
Civic Centre, Tunbridge Wells. Mr. E. Berry Webber, assessor. Premiums: £300, £200, £100 and £75. Conditions from Town Clerk. Dep. £1 1s.	June 15	Sept. 22
For municipal assembly halls, for Wolverhampton T.C. Mr. C. Cowles-Voysey, F.R.I.B.A., assessor. Premiums: £350, £250, £150. Conditions from Town Clerk, Town Hall. (Dep. £1 1s.). Last day for questions: May 21	April 20-27	October 1
School, Hart-lane, for Luton T.C. Mr. J. A. Gotch, P.P.R.I.B.A., has selected five local architects to take part. £10 10s. to each unsuccessful architect	June 8	—
Library block, Swansea College, for University College. Professor W. G. Newton, F.R.I.B.A., assessor. No conditions yet available ...	July 6	—
Public elementary school, Wyken, for Coventry E.C. Mr. A. C. Bunch, F.R.I.B.A., assessor. No conditions yet available	July 6	—
For 74 flats on Glebe-place site, for Stoke Newington B.C. Six firms of architects have been selected. Mr. Robert Lowry, F.R.I.B.A., assessor. The scheme is postponed temporarily	July 13	—



CHURCH OF ST. ALBAN, BECONTREE, ESSEX.

MESSRS. MILNER AND CRAZE, L.R.I.B.A., Architects. (See pages 368, 378-80.)

CORRESPONDENCE

Art and Architecture.

SIR,—I have read many interesting articles and letters in *The Builder* about art and architecture. The writers are all in search of a recipe for the æsthetically and functionally perfect building. They seem to divide architecture into two classes—the traditional and the "Modern." By traditional they mean something that has been done before, and by "Modern" they mean something which has not often been done before. By the time those writers retire, the "Modern" will have become traditional.

I believe that a design is worthless if it is not original; that is to say, if it is not purely the result of the application of the architect's first principles fused by his creative intuition. Any building which has a "style" derived without understanding from the traditional is worthless as a creation.

Let us for a moment consider pictorial art. The qualities of any picture can be arbitrarily divided into two classes—the Romantic and the Abstract. In the Romantic qualities I include such things as sentiment, various human passions, literary content (the problem picture), the character of a portrait (human qualities of the sitter) or landscape (sunshine, heat, vast distance, atmosphere, etc.). The abstract qualities I define as those of pure colour and form. To appreciate these one must be able to regard the picture as a carpet or a textile or pottery—namely, as a balanced arrangement of line, two-dimensional and three-dimensional form and of colour to fill a given space.

As a reaction from the very romantic Victorian and Edwardian ages, many so-called "modern" artists are deliberately excluding all Romantic qualities from their work. Their concern is to produce a balanced arrangement of mass, colour, texture, etc., within their given two-dimensional space or within their imaginary cubic space, without regard to any human interest. It is not a new idea. Many of the old masters of the 12th and 13th centuries display these abstract qualities perfectly and unobtrusively fused with romantic (generally religious) qualities.

The problem of the architect is, to my mind, the same as that of the "Modern" abstract painter, but with many more limitations. If the painter wants a certain mass of a certain colour in a certain place to balance his three-dimensional arrangement, he can put it there and no one shall say him nay. But the architect has function, the client, the L.C.C., and many other limitations. The architect's problem is to take his materials and put them together (a) to function, and (b) to make a balanced (not necessarily symmetrical) arrangement to his eye. His materials are straight lines, curves, planes, masses, colours and textures. The use of texture is comparatively new, for instance, in plaster.

A study of pictorial art, and particularly abstract work, would, I think, be of the greatest assistance to a young architect, especially if it be practical. Except for the gifted few there is, in my opinion, no other means of acquiring from the antique, from the present and from nature that store of beautiful relations of form and colour on which to draw for an original creation. This is not to say that no architect is proficient unless he has studied abstract painting. Many have at the start of their careers a store of these beautiful relations, but it is very evident that the present system of training destroys their power to create originally, using only their materials and their minds, and instead teaches them to use other architects' minds, copying their particular style, whether antique or so-called modern.

W. E. A. M.

Unqualified Architects.

SIR,—It is becoming more apparent every day that the efforts being made to educate the public as to the advisability of engaging the services of qualified architects in the erection of dwellings are meeting with poor success. Throughout the whole of the country, anyone who can draw parallel lines in the form of a square and label it a room is being employed to prepare plans, with this result: hundreds of trained practitioners have covered their drawing desks, and an honest livelihood is becoming a sore problem.

We hear a good deal nowadays of the iniquity of one tradesman taking the food out of another tradesman's mouth, and how trade unions fight their hardest to prevent it. Chief among professional men, it seems to me, the architects are suffering from dishonest competition by what may be termed "amateur architects." This term embraces builders' clerks, employees in engineering works of all kinds, assistants in town surveyors' offices, and even, more shame to them, some town surveyors themselves.

The writer has from time to time had occasion to examine many of the caricatures passing under the name of plans which have issued from the drawing-pens of such men, and it is a wonder that any council gives them a second glance. One set of drawings I have in mind was prepared by a surveyor, and was full of errors from start to finish. Truly "a little knowledge is a dangerous thing."

There is a simple remedy, so simple that I wonder greatly that our great architectural bodies have not pressed with all their powers for its adoption. It is this. By means of the Registration Act, or other lawful means, make it compulsory that every plan submitted to a local authority shall have been prepared by a qualified and registered architect. Then, and only then, will the architect come into his own again, and before very long the public will derive such benefit that they will rejoice with us.

I enclose my card, and remain,

NORTHERNER.

[The ultimate purpose of Registration is to do what our correspondent suggests.—ED.]

NEW RESIDENTIAL FLATS OVERLOOKING THE CAIRO MUSEUM.
(See Page 374.)

Arbitration.

SIR,—Comparatively little is heard about arbitration proceedings, for, as a general rule, none of those concerned desires publicity. Speaking generally, a builder will not resort to arbitration when the architect is opposed to him, unless he be suffering a deep feeling of grievance, and the amount of money involved is considerable. In this he acts wisely, for if he win his case it may still in the long run not profit him. Nor does the architect like to be directly concerned in the result of such proceedings, but they are sometimes more or less forced upon him by his principal, and he would be more than human did he not prefer to be heard by a sympathetic court. Even so, it does not seem to be quite fair that he should nominate the arbitrator, nor cast on the builder the initial unpleasantness of having to resist the nomination. It would be far better to leave the nomination, should a dispute arise, to the President of the R.I.B.A., as may be done under the governing clause in the standard conditions of contract.

The debate, however, turns upon training of a special kind in order to qualify the arbitrator. To arrive at a common-sense decision, which I think was the original aim of those who sought to keep building disputes out of the Courts, does not, I submit, require of the arbitrator a specialised knowledge of building law. If the dispute turns on points of law rather than on fact, the Law Courts are the place for the hearing. On all other points a qualified architect of experience, such as one would expect to have appointed by the President of the Institute, would normally command the trust of both architect and builder. His own good sense would advise him in necessary cases to call in an impartial quantity surveyor. JUROR.

[The debate on this subject appeared in our issues for August 17, 24 and 31.—ED.]

MODERN RESIDENTIAL ARCHITECTURE IN EGYPT

By PROFESSOR ARTHUR P. WICKENDEN, F.R.I.B.A., A.M.Inst.C.E.

THE historic buildings of the ancient Egyptians have afforded a continual source of interest and wonderment to many generations, and the study of the methods adopted by those early builders even to-day provides plenty of scope for speculation amongst scientific investigators.

Supposing, however, that the builders of the pyramids were able to come back to the land of the Pharaohs to-day, it is very probable that they would be equally interested and no less astonished at the building activities of modern Egypt. Amongst other things, they would find that the construction of royal tombs and mortuary temples has given place to the erection of homes for a vast population. For some long time the residential quarters in and around such important cities as Cairo and Alexandria have been steadily growing, but during the past five or six years some of these localities have been developed almost beyond recognition.

Since the economic crisis caused the suspension of the construction of many public works, contractors have been only too willing to undertake the erection of domestic buildings at relatively low prices, and this form of business activity has also been considered by many the best means of investment. Thus a great impetus has been given to private building enterprise.

The majority of domestic or residential buildings in the modern areas of the large Egyptian cities may be grouped within two categories—villa residences, generally of two stories, and large blocks of apartment houses of seven or eight stories in height, having from two to six flats on each floor and with each flat containing from four to seven rooms.

The planning in both categories is mainly governed by the prevailing climatic conditions, which make it necessary to obtain plenty of ventilation, to take advantage of the sunshine at convenient times and to provide, if possible, for some of the living-rooms to have a northern aspect.

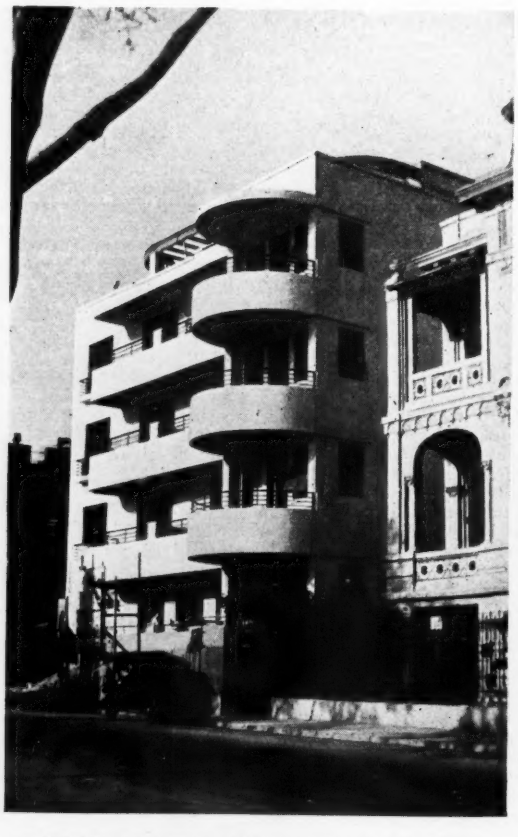
The modern villa in Egypt is arranged in much the same manner as the large country house in England, with a spacious lounge hall from which lead the principal rooms, and with a grand staircase as a special feature. The upper floor is on similar lines, with the bedrooms grouped around a large upper lounge. As would be expected in a country where open-air life is possible for the greater part of the year, verandas and balconies are provided to as many rooms as possible. These features might well be introduced more frequently in England, in spite of the variable climate.

The touch of snug homeliness, so characteristic of English villas of a smaller type, is entirely lacking in the average Egyptian houses and flats, and the idea of labour-saving planning and equipment makes no serious appeal. The former dissimilarity may be attributed to climatic influences and the different conditions of home life, whilst the latter can easily be accounted for by the fact that the domestic servant problem of the West is at present non-existent in Egypt.

The large apartment houses, of which hundreds have been springing up in all the populous centres during the past few years, generally follow a more or less standardised type of plan, with most of the living-rooms gaining access from a main hall. In the older buildings these halls occupied a big percentage of the total available floor space, and were frequently without adequate direct daylight. The more recent plans have, however, been greatly improved and are more economical in arrangement and dimensions. Principal staircases, with one or more passenger lifts, as a rule serve the entrances to four, five or six self-contained houses, each of which is provided with a servants' entrance from a separate service staircase. The accommodation in the medium-sized apartment house consists of hall, dining-room, salon, three or four bedrooms, kitchen, bathroom, and usual domestic offices. During seven or

RESIDENTIAL FLATS IN A BUSY PART OF CAIRO.

A MODERN APARTMENT BUILDING ON THE BANK OF THE NILE.



CANTILEVER STRUCTURE, LENDING ITSELF TO THE EASTERN DEMAND FOR OPEN BALCONIES

RECENT BLOCKS OF FLATS CAIRO.

A PALATIAL RESIDENCE IN CAIRO'S GARDEN CITY.

eight months of the year it is considered by most people advisable to close the windows of living-rooms from the hot rays of the mid-day sun, and for this reason every window is provided either with side-hung louvre shutters or rolling timber lath blinds.

The population of the cities of modern Egypt is representative of so many different nationalities that it is not surprising that architecturally the domestic buildings are of a very cosmopolitan character. Examples of almost every conceivable style of architecture, ancient and modern, are to be seen, with the good, bad, and indifferent often mixed up together, devoid of any restraint, and on building estates evolved without the guiding hand of the experienced town-planner. It is to be feared that Egypt, in the development of her important cities, is making the same mistake that many other countries have done, in postponing the serious application of town-planning principles until it is too late.

A few years ago the façades of most residential buildings were treated in a very florid type of Renaissance architecture, with a super-abundance of ornament in fibrous plaster, which, being of comparatively low cost, gave unlimited scope to decorative plasterers with little or no training or taste. This highly decorative material collected the dust and also weathered badly, with the result that the buildings after a few years presented a dilapidated and tawdry appearance. Happily the appeal of this cheap ornamentation seems to have diminished, and a much more restrained and simpler architectural treatment is now in vogue.

The tendency to-day is to follow the fashion of German work in emphasising horizontal lines by means of continuous balconies and fenestration. This method of design cannot, however, be applied with entire success owing to the fact that the usual form of the structures and the proportions of the openings are essentially vertical in character. The necessary high-pitch of the rooms with corresponding height of doors and windows, and the large number of stories which building owners now require in order to obtain the maximum value from their land, are all serious handicaps to the disciples of horizontality. Constructional methods provide an interesting point of comparison between house building in the near East and in Western Europe. The favourable climatic conditions in Egypt and also the enforcement of very few building laws and regulations render it possible for a much lower standard of efficiency in weather-proof construction to be adopted than would be permitted in England, for example.

Whereas the houses in Egypt might be considered in many ways to be badly constructed, the large number of completely out-of-date but structurally sound houses to be found all over England rather suggests that in the past English methods of construction have been unnecessarily good for the required purpose.

Commemorative Window, Morden College.

A stained-glass window has been placed in the Chapel of Morden College, Blackheath, to commemorate 50 years' administration by trustees chosen from the Court of Aldermen of the City of London. It is of interest to recall that Morden College, built by Sir Christopher Wren in 1700, was the gift of Sir John Morden, a wealthy Turkey merchant, who fitted out three ships at great expense and sent them upon a trading voyage. The years went by, and as no news of his vessels reached his ears he gave up hope, and was forced at last to seek service with a London tradesman. Ten years later his ships arrived at Deptford Dock, and once more he found himself a very rich man. Out of gratitude he founded the college for merchants who, like himself, had suffered great losses.

AN ARABESQUE VILLA.

OLDER TYPE OF COUNTRY VILLA AT FAYUUM, THE "LAKE DISTRICT" OF EGYPT.

DESIGN AT OLYMPIA

ARCHITECTURE AND THE STANDS.

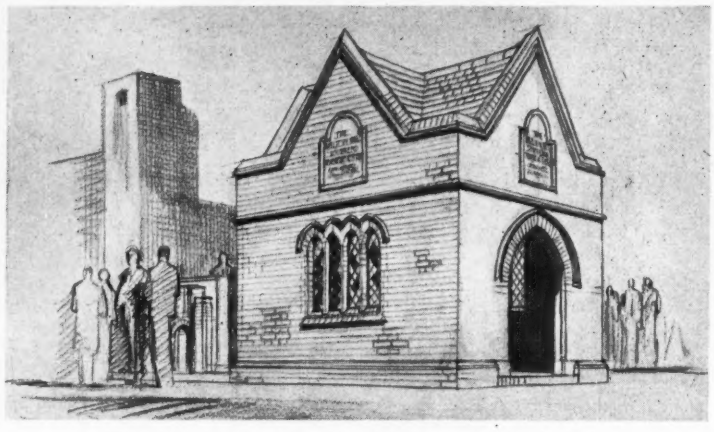
THERE are still many connected with the building trades who remember the building exhibitions at the Agricultural Hall, Islington, before the present organisers, in 1895, undertook the direction. Sweets and spectacles; sticking-plaster and patchouli; side-shows and shooting galleries; amusement came first and building second! That state of affairs was rapidly altered. If the show was to be a building exhibition, then building it should be. The peep-shows were ruthlessly cut out and the exhibition started on its career as a biennial display of the most reliable and up-to-date structural components.

The part the architect has played in this development is considerable. From the beginning of the new era the opportunity offered for imaginative technical design—the special perquisite of the architect—was fully realised by the exhibition organisers. Even in the 1895 exhibition a few of the stands were planned by architects—a custom which has persisted and increased, until to-day many far-seeing firms employ the services of qualified men. For this there are excellent reasons. In the early days at the Agricultural Hall many brick manufacturers, for example, were content to exhibit a few bricks on a table. A glance round Olympia next Wednesday will show how many brick firms have taken the opportunity of displaying their products in the form of an architect-designed structure. Clearly an obvious method and one in which the architect's services are invaluable.

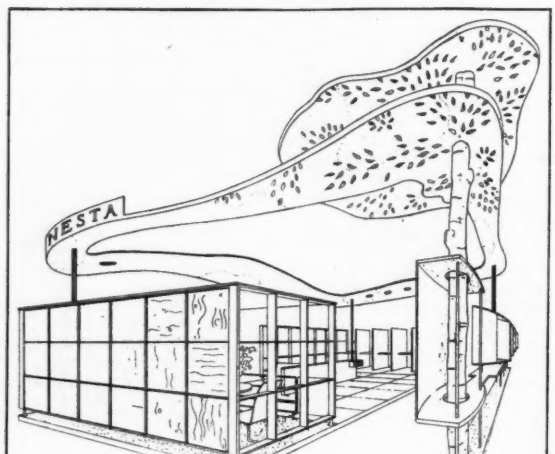
There is a further reason why architects should share in the work. Building is an industry where all should pull together for the common good. Is it altogether reasonable for a firm to expect for its products a high degree of interest from the profession if none of its members has had a share in the design of the stand? As Mr. H. Greville Montgomery, the director of the exhibition, has put it: "Why do the architect out of a job?"

Not every display, of course, necessarily demands the services of an architect. We have in mind such trades as building plant and components, hoists, scaffolding, etc. Yet we believe that many firms displaying such goods would gain considerably by achieving an arresting and attractive setting.

Visitors to Olympia this year will appreciate the still-improving standard of the exhibits. Architectural unity of the exhibition as a whole is unlikely, for many good reasons, to be achieved, but it will be evident that the design of the individual stands is on the up-grade.



STAND FOR THE MILTON HALL (SOUTHEND) BRICK CO., LTD.,
MR. W. J. PALMER-JONES, F.R.I.B.A., Architect.

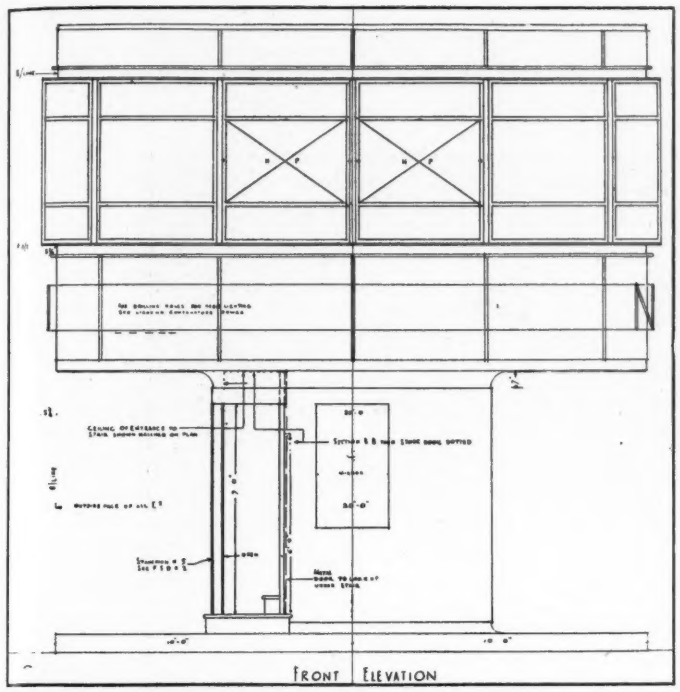


STAND FOR VENESTA, LTD.
MR. A. F. SKINNER (TECTON), Architect.

This year brick firms have produced a number of good examples of arresting designs. A striking stand, on traditional lines, is that of the MILTON HALL (SOUTHEND) BRICK CO., LTD. This consists of a rectangular gabled pavilion faced with rustic red facings with plinth, string course and copings of special moulded bricks. In order to show the adaptability of brick to ecclesiastical work, the doorways and windows have pointed arches, also of special moulded bricks. On the exterior of the stand are shown two fireplaces formed of small multi-coloured Essex rustic red facings, together with four panels of other varieties of brick. In the interior are shown some further panels of various varieties of bricks and also photographs, etc., of completed buildings. The architect of the stand is Mr. W. J. Palmer-Jones, F.R.I.B.A.

The Venesta stand has been erected from the winning design in a competition organised by Messrs. Venesta, Ltd. The successful architect was Mr. A. F. Skinner (of Messrs. Tecton), who has designed, making full use of plywoods which the firm manufacture, a striking and expressive stand. Its appeal is both visual and technical. The birch trunk and plywood ceiling motif, with formalised painted clouds and stencilled leaves, show the casual visitor at a glance what type of product is being shown, while

STAND FOR THOMAS LAWRENCE AND SONS MR. EDGAR RANGER, F.R.I.B.A., Architect.



STAND FOR BRITISH STEELWORK ASSOCIATION.
SIR JOHN BURNET, TAIT AND LORNE, Architects.

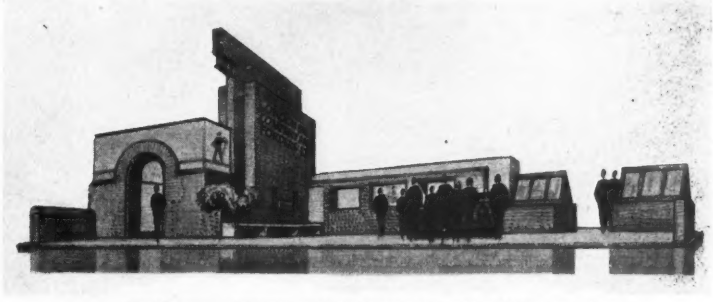
for the constructor there are the inset panels of plywoods and metal-faced finishes, the Venesta doors, and the plywood floor. More than that, full provision is made for the technician. Samples are shown on the stand of the various methods of working, fixing and edging plywood which should interest every architect and joiner. A special feature is made of photographs of executed work.

Very charming in its simplicity is the effort of THOMAS LAWRENCE AND SONS, the Bracknell brickmakers. Without in any way making this little pavilion appear "spotty," Mr. Edgar Ranger has contrived to make use of a large variety of bricks in his design. The pavilion walls are, in the upper part, of 2-in. bricks, and the plinth is of 2⅝-in. bricks. The entrance archway is of 2-in. rubbers, and the other entrances are framed in 2⅝-in. cherry reds. The pavilion is tiled on the four sides with some of the varieties manufactured by Messrs. Lawrence. A feature of the interior is a simply-designed fireplace, the surround and back of which is built in "Roman" tiles, 6 in. × 3 in. × 1½, with a sunk panel in rubbers carved by Mr. Pye, of Banstead, Surrey. The stand as a whole is an example of English brickwork at its best.

The BRITISH STEELWORK ASSOCIATION'S stand is one of the most interesting in the Exhibition. It has been designed, to show the uses of steel in many forms, by Sir John Burnet, Tait and Lorne, and, as the elevation shows, presents a striking appearance. With the exception of rubber flooring, the whole structure is in steel. It is a two-story building, the upper floor being cantilevered out from six internal piers which have been encased by steel sheeting to form a hollow "drum," which supports the upper floor and contains a steel staircase. This steel sheeting is made in standard units. Architects and engineers will find the manner of jointing, and also of securing the metal windows, of great interest. The whole stand, in fact, is an object-lesson in the possibilities of steel in construction and fittings to-day. The doors, skirtings and furniture are made of this metal. The structure has been painted a royal blue in colour, with two horizontal bands of vermilion. The "knife-edge" lettering of the British Steelwork Association's name, in white, stands out admirably.

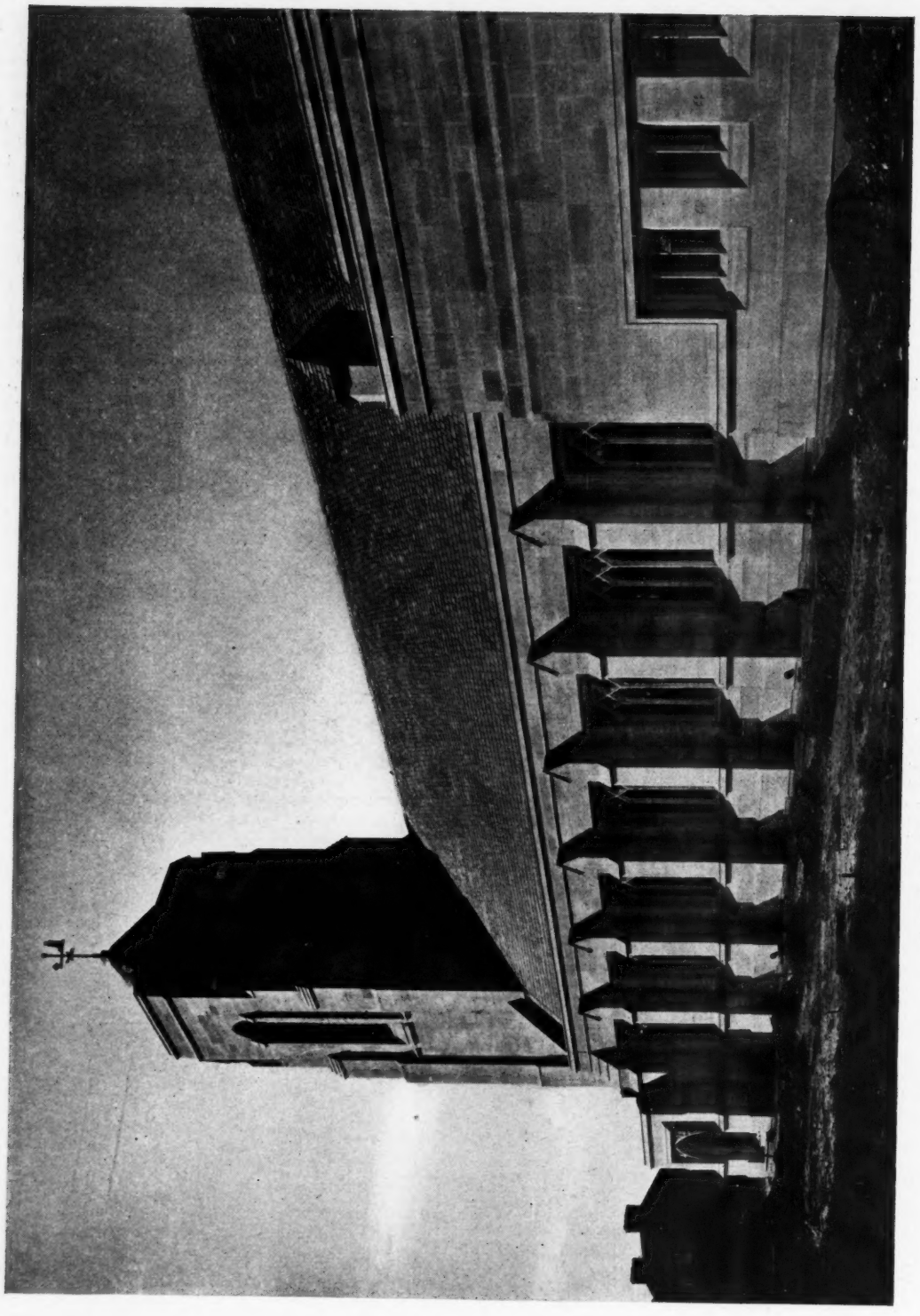
The stand of the LONDON BRICK COMPANY AND FORDERS, LTD., has been designed by Mr. Julian R. Leathart, F.R.I.B.A., to display the various types and shapes of "Phorpres" bricks. The varying textures and colours of the different types of bricks have been arranged by the architect to produce a definite surface patterning in which the darker "Rustic" facing bricks form a base to the lighter colour of the upper walls. Various standard brick shapes have been introduced to illustrate the decorative possibilities of bricks which normally are used for ordinary wall bonding; the effect, for example, of common "squint" bricks used vertically in the form of pilasters or arch rings produces an interesting effect of liveliness and richness of contour. Included in the wall surfaces are "Phorpres" cellular bricks sectioned to show the multi-cellular form of wall obtained by their use. This stand is an admirable example of modern design.

The NUTBOURNE BRICKWORKS, LTD., have had designed a building of traditional Tudor type to show their multi-coloured, handmade Sussex stocks and also some red facings and specials. The stand is planned on the lines of a garden house, and the aim has been, whilst providing the necessary entrance, windows, etc., to give a sufficient area of plain walling to show the actual effect of the bricks in executed work. Internally there is an open-hearth brick fireplace in the wall opposite the entrance. The architects were Messrs. Howes and Jackman, AA.R.I.B.A., who may be congratulated on the restraint with which they have handled the design.

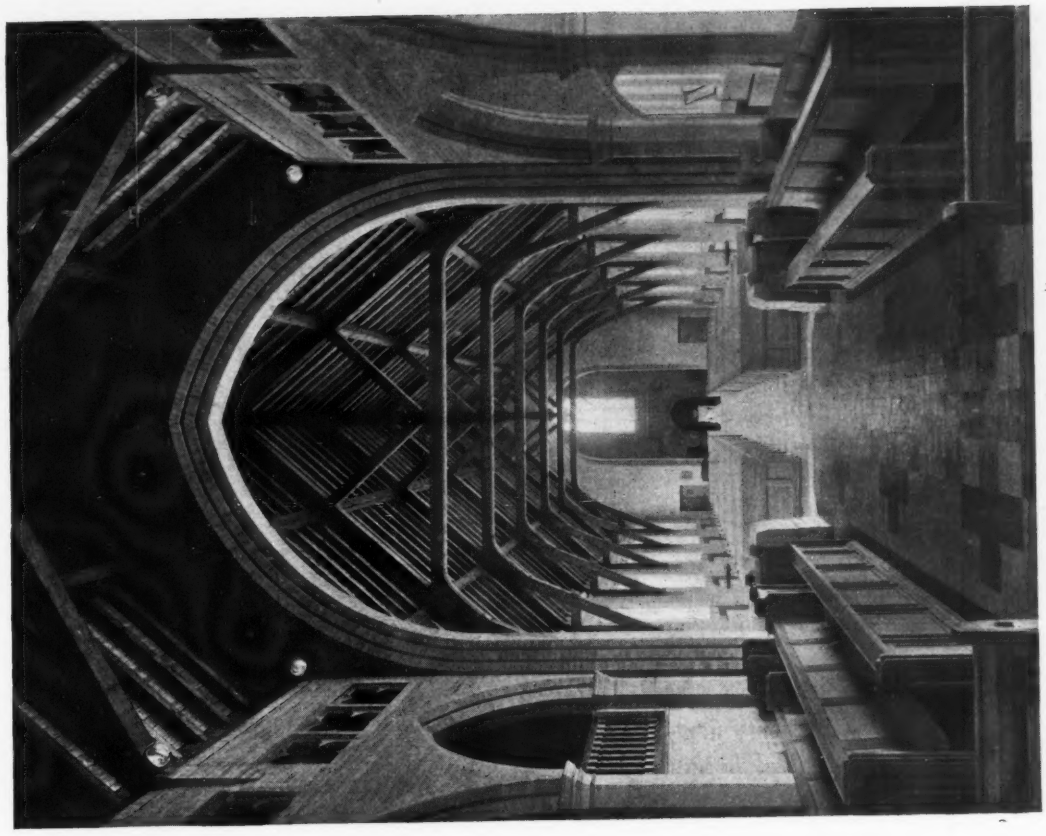


STAND FOR LONDON BRICK COMPANY AND FORDERS, LTD.
MR. JULIAN LEATHART, F.R.I.B.A., Architect.

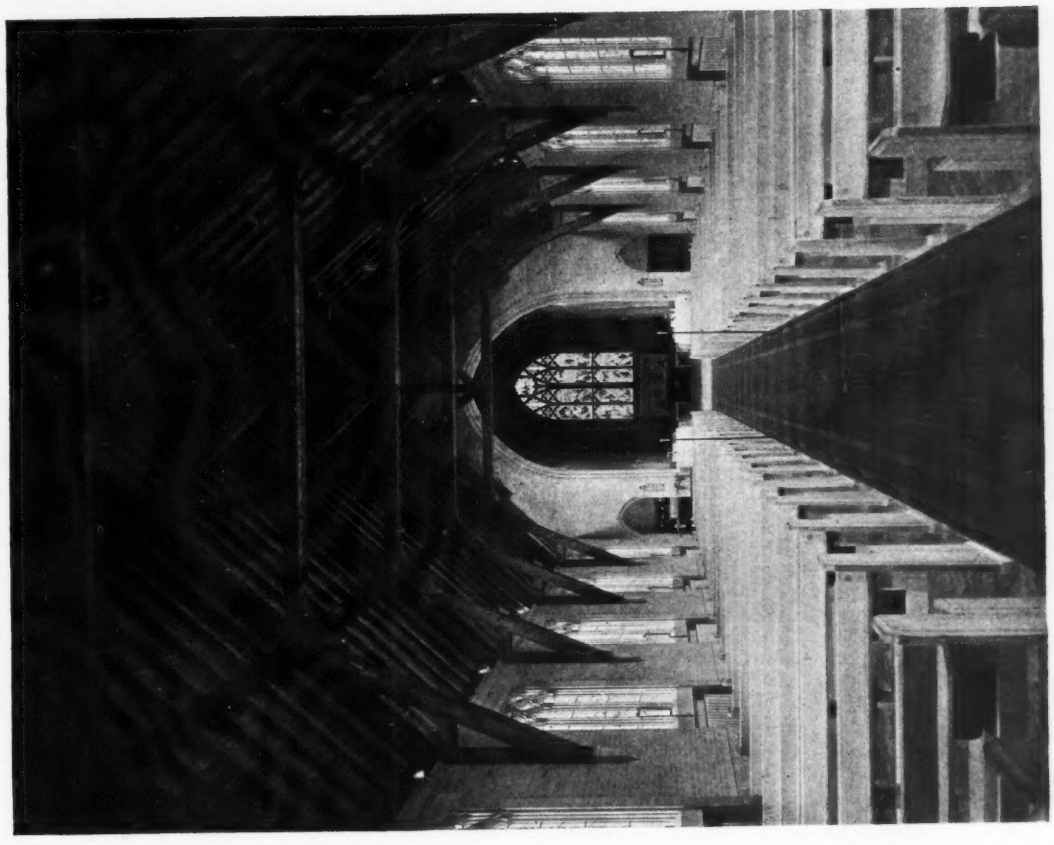
STAND FOR NUTBOURNE BRICKWORKS, LTD.
MESSRS. HOWES AND JACKMAN, AA.R.I.B.A., Architects.



CHURCH OF ST. ALBAN, BECONTREE, ESSEX: View from South-East.
MESSRS. MILNER AND CRAZE, L.R.I.B.A., Architects.



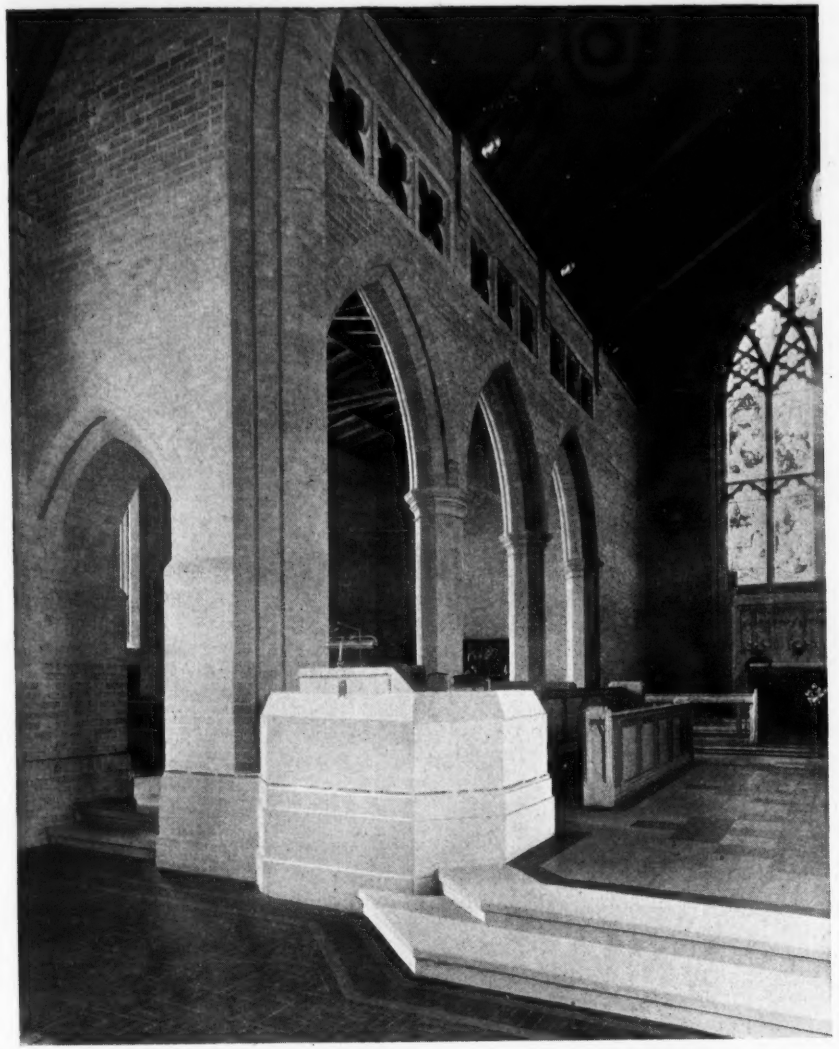
CHANCEL AND NAVE, LOOKING WEST.



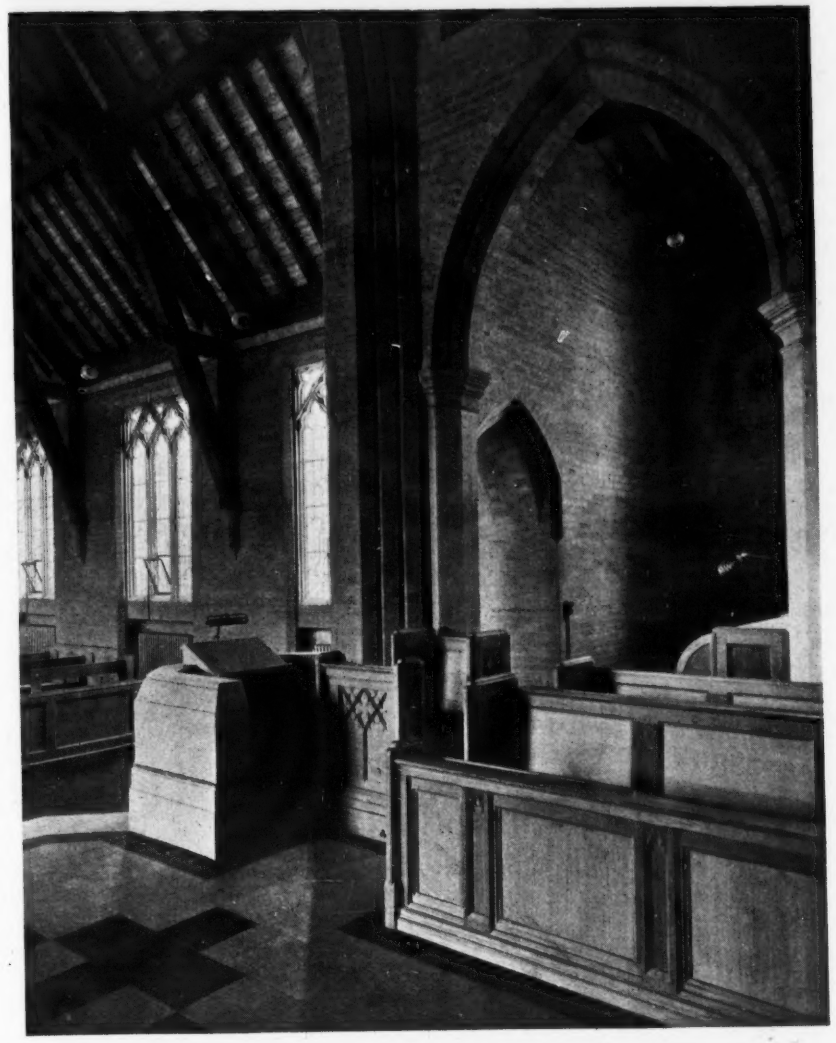
THE NAVE, LOOKING EAST.

CHURCH OF ST. ALBAN, BECONTREE, ESSEX.

MESSRS. MILNER AND CRAZE L.R.I.B.A. Architects.



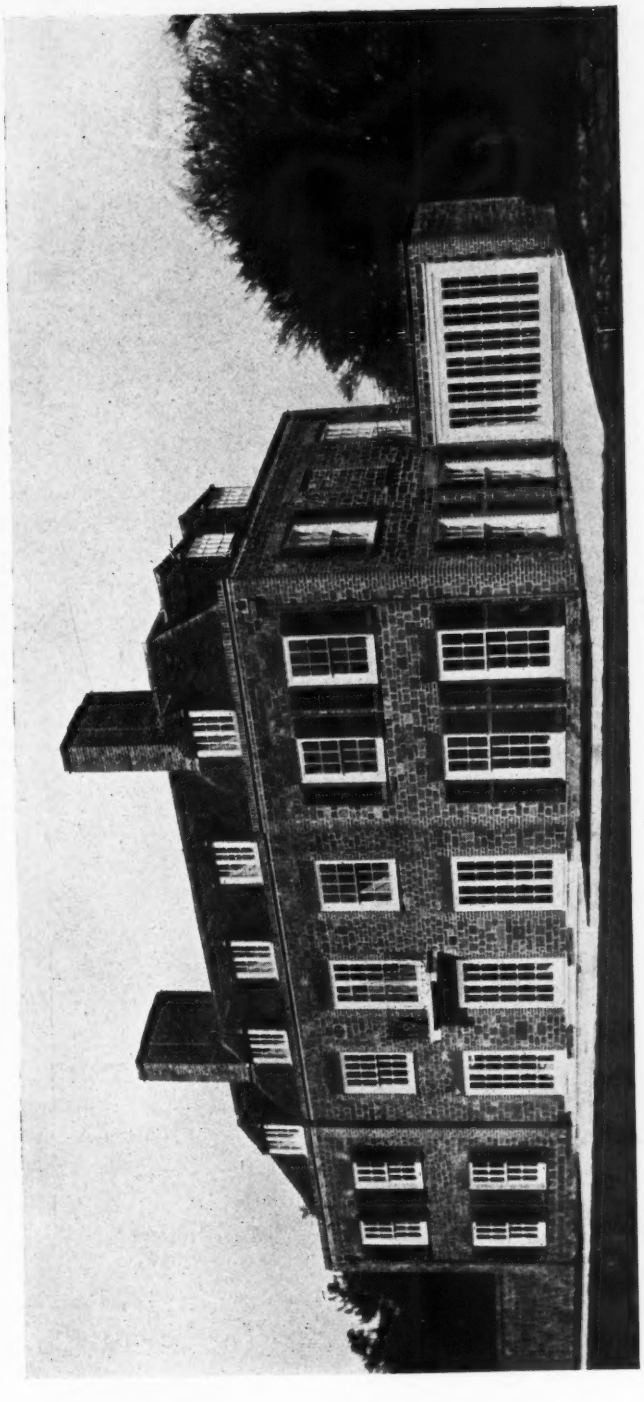
CHANCEL AND CHAPEL, FROM NAVE.



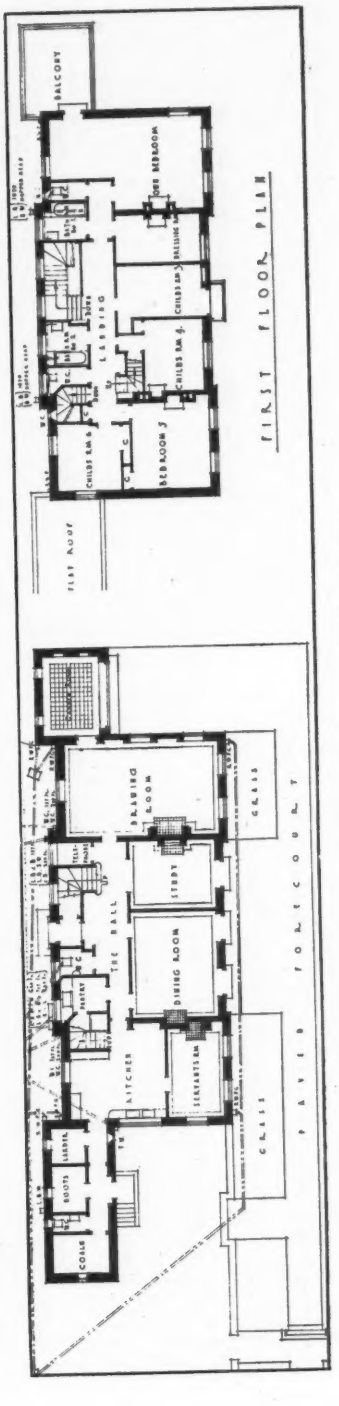
VIEW IN CHANCEL.

CHURCH OF ST. ALBAN, BECONTREE, ESSEX.

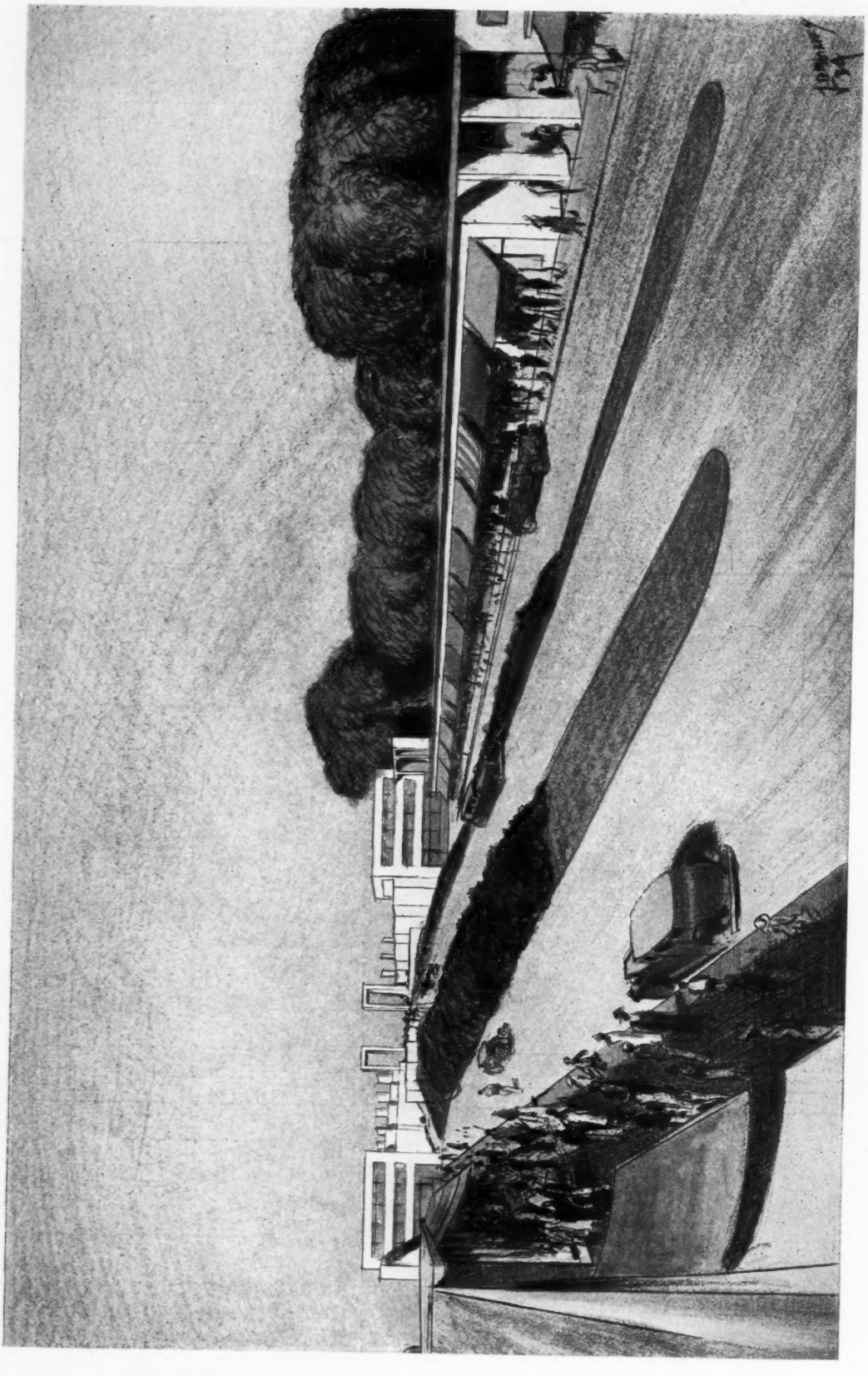
MESSRS. MILNER AND CRAZE, L.R.I.B.A., Architects.



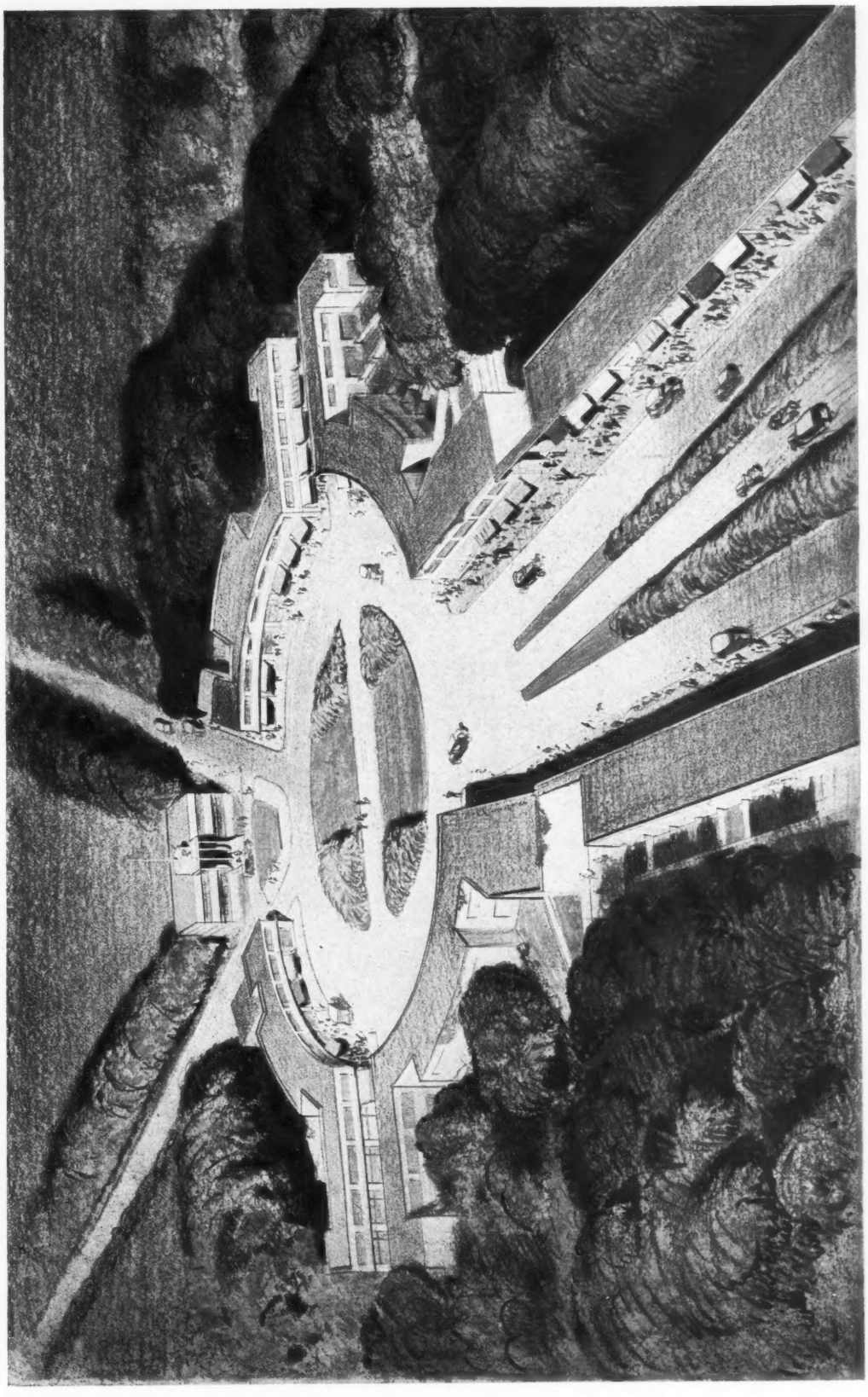
GARDEN FRONT.



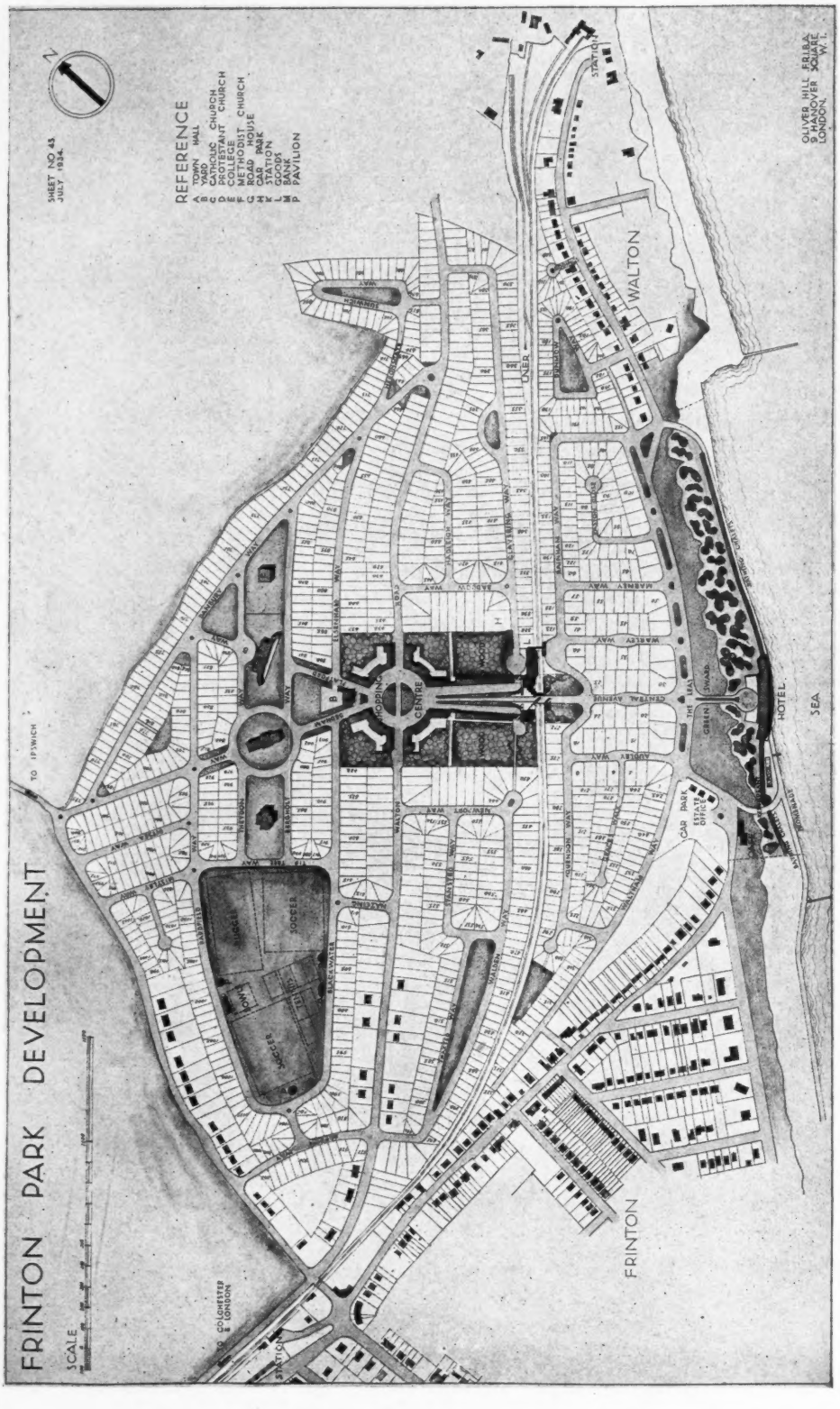
"SHOOTLANDS," WOTTON, SURREY.
MR. OSWALD P. MILNE, F.R.I.B.A., Architect



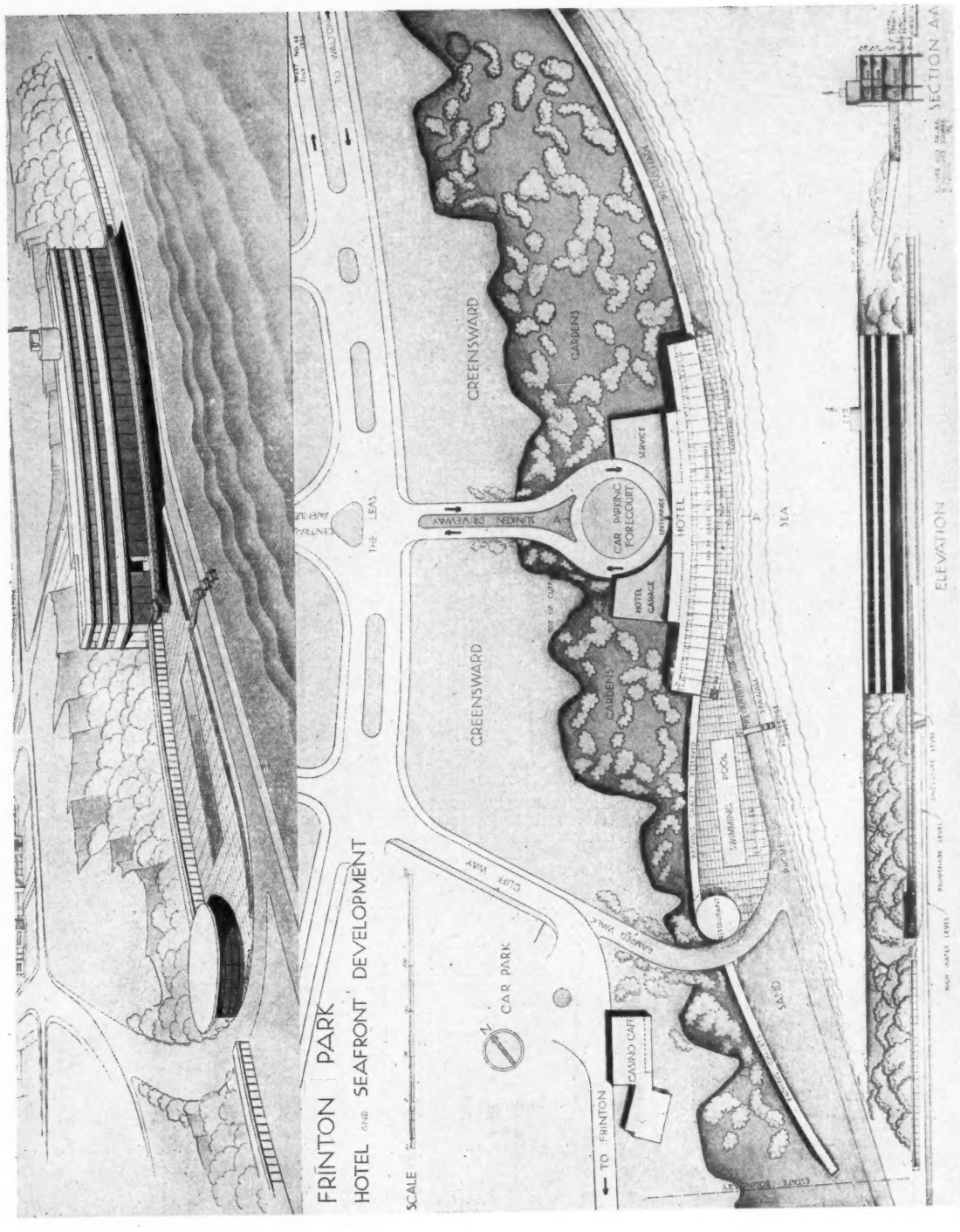
FRINTON PARK: View of Shopping Centre, looking South-East.
MR. OLIVER HILL, F.R.I.B.A., Architect.



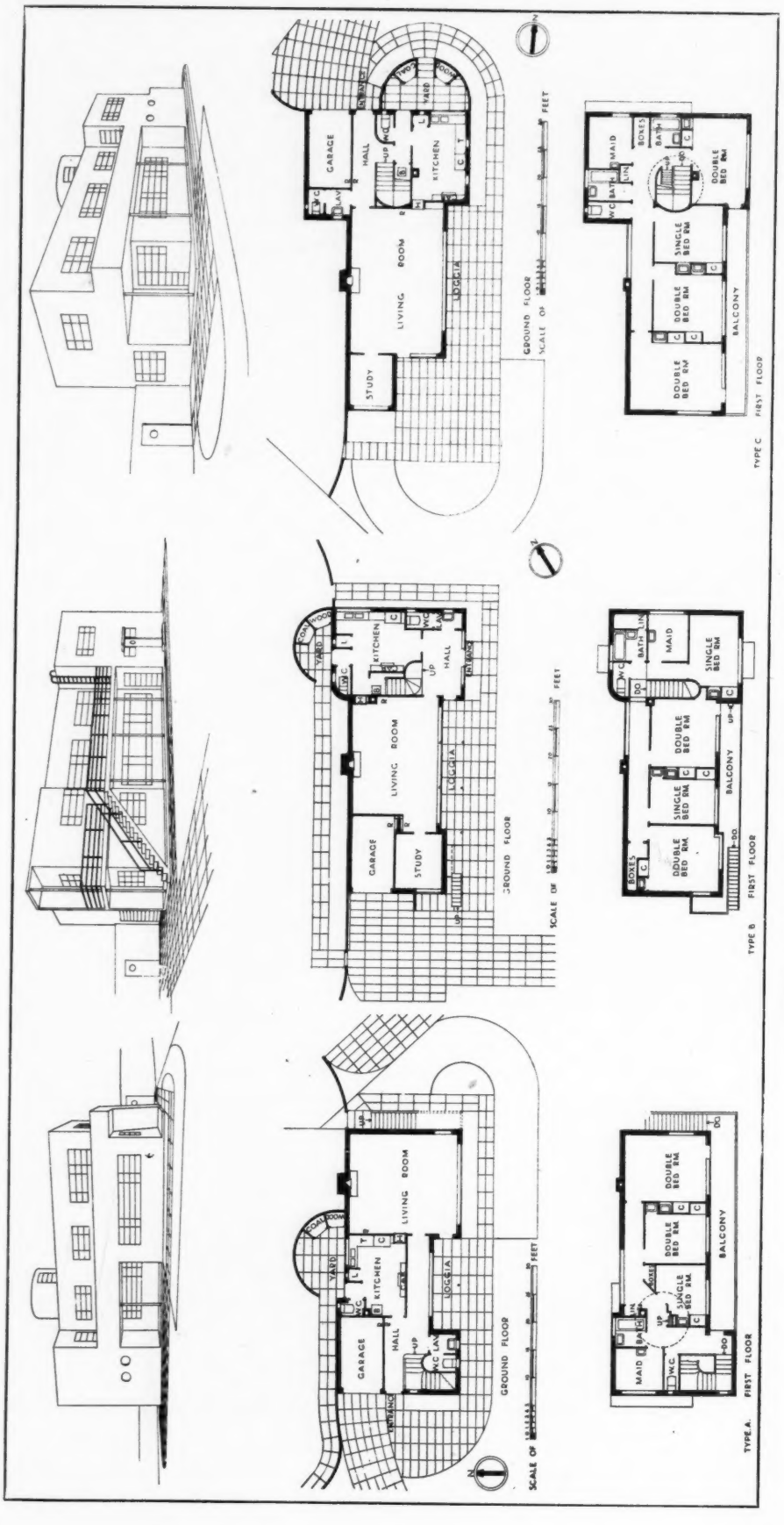
FRINTON PARK: View of the Shopping Centre, showing new Town Hall at end.
MR. OLIVER HILL, F.R.I.B.A., Architect.



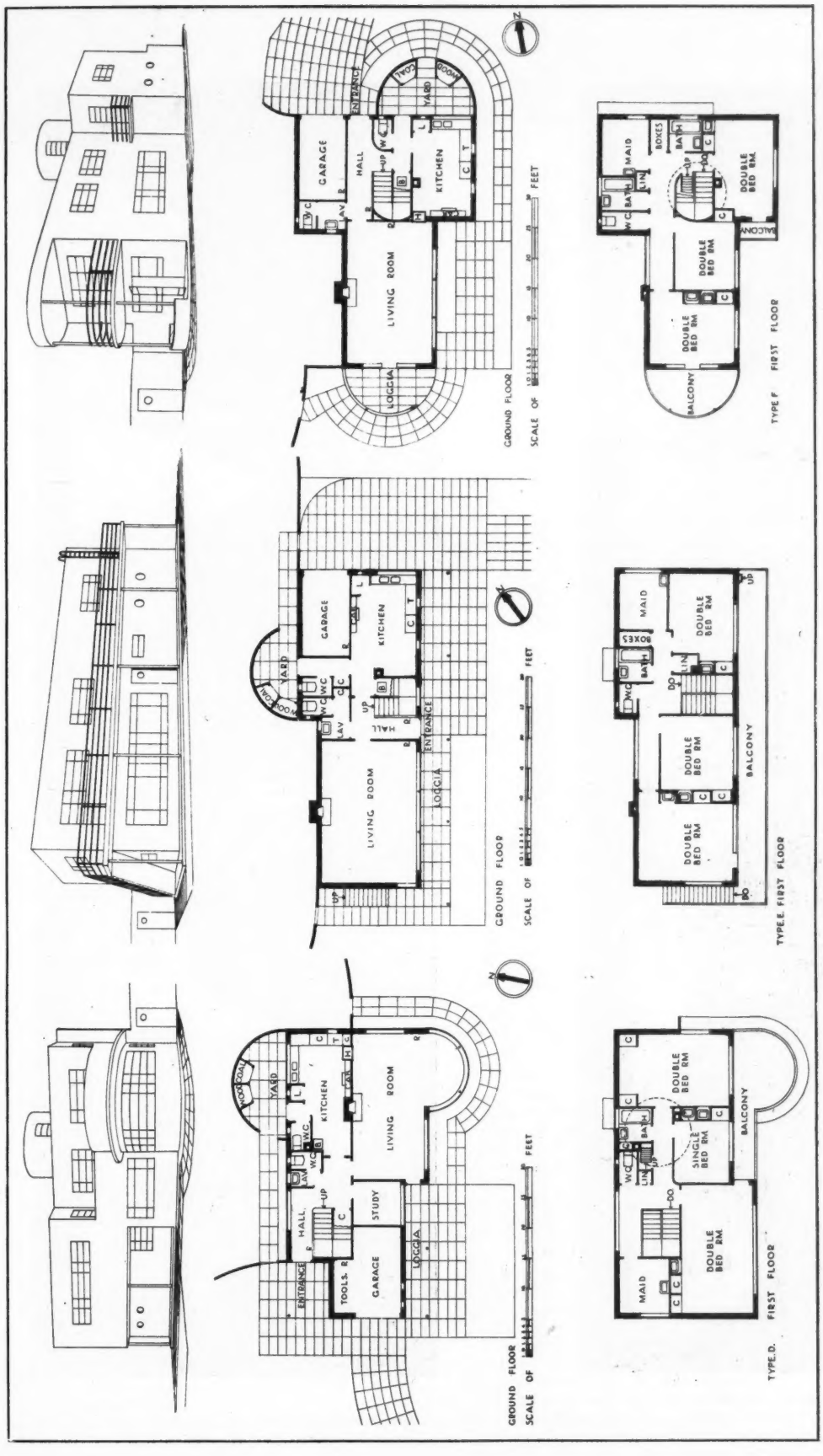
FRINTON PARK: General Lay-out. MR. OLIVER HILL, F.R.I.B.A., Architect.



THE FRINTON PARK HOTEL. MR. OLIVER HILL, F.R.I.B.A., Architect.



FRINTON PARK: Small Houses. MR. OLIVER HILL, F.R.I.B.A., Architect.



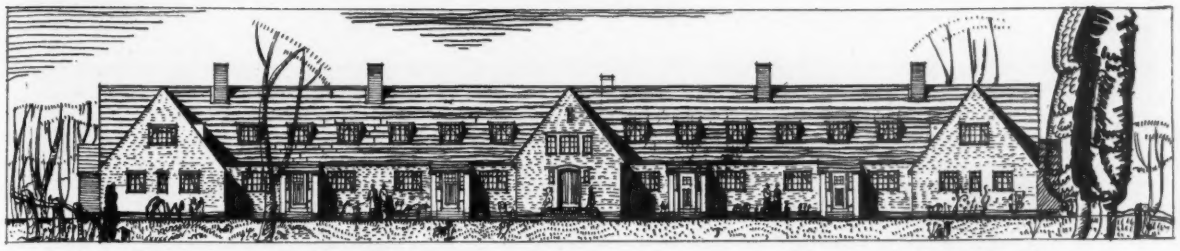
FRINTON PARK: Small Houses. MR. OLIVER HILL, F.R.I.B.A., Architect.

SOUTH ELEVATION.

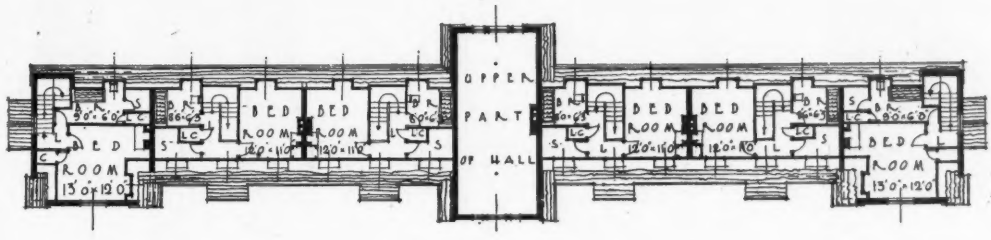
VIEW FROM SOUTH-WEST

TRADES UNION CONGRESS TOLPUDDLE MEMORIAL COTTAGES.

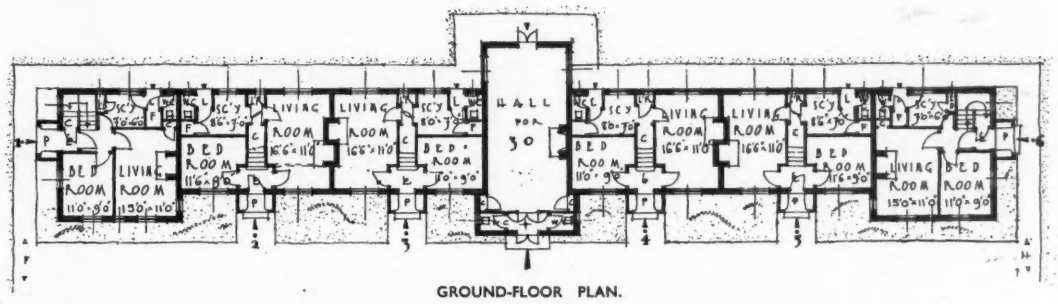
MR. EDWARD UNWIN, A.R.I.B.A. Architect.



FRONT ELEVATION.



FIRST-FLOOR PLAN.



GROUND-FLOOR PLAN.

TRADES UNION CONGRESS TOLPUDDLE MEMORIAL COTTAGES.

MR. EDWARD UNWIN, A.R.I.B.A., Architect.

The problem before the architect in the design of these cottages was to produce six cottages which would provide full modern conveniences for the old people who are to inhabit them, and this had to be considered in relation to the surroundings. It was necessary to produce a design that, while being modern in its convenience, was in harmony with the historical village in which the cottages were to be placed.

The building materials of the village, apart from a small quantity of stone in the church, were largely colour-washed plaster and thatch. These were obviously not suited to modern requirements, and modern materials had to be found to harmonise with them. Consequently, a hand-made brick varying from light cream to pale grey in colour, and concrete tiles which approximate in colour to the old lichen-covered roofs of the neighbourhood, were selected.

The necessity for having the greater part of the accommodation on the ground floor made it convenient to plan with a low eaves line in harmony with the old work, while the desirability of setting the buildings back 100 ft. from the road to prevent the inhabitants being disturbed by the passing traffic, raised the building well up on the hillside, so giving it the necessary prominence as a monument.

The cottages stand well back on rising ground, on the main road from London to Weymouth. They are built in one block, three cottages standing on either side of the central hall, or common room.

Each cottage is built in two stories, the upper floor being reached by a stairs of specially easy gradient. The living-room is 16½ ft. by 11 ft. One bedroom downstairs is 9 ft. by 11 ft., and there is also a good-sized bedroom upstairs, a bathroom, fitted with a linen and store cupboard, and a washbowl. Upstairs, and on the ground floor, there are w.c.s. Ample space is provided in the scullery for the larder and the storage of fuel.

A deep well has been sunk which provides an adequate supply of pure water, and an automatically operated electric pump will keep the cottages supplied.

The cottages are fitted out with electric light and power, and the heating system adopted has been so arranged that a uniform temperature can be maintained right throughout the cottages and the common room. The Electrical Trades Union has made itself responsible for all the electrical labour costs.

An efficient boiler from the living-room fire supplies hot water to the taps in addition to heating radiators in the main bedroom and the hall of each cottage, and electric water heaters supply the taps in summer when the fires are not wanted. Electric cookers and wash coppers are also provided for convenience in the hot weather and electric fires for the occasional heat sometimes required during short periods.

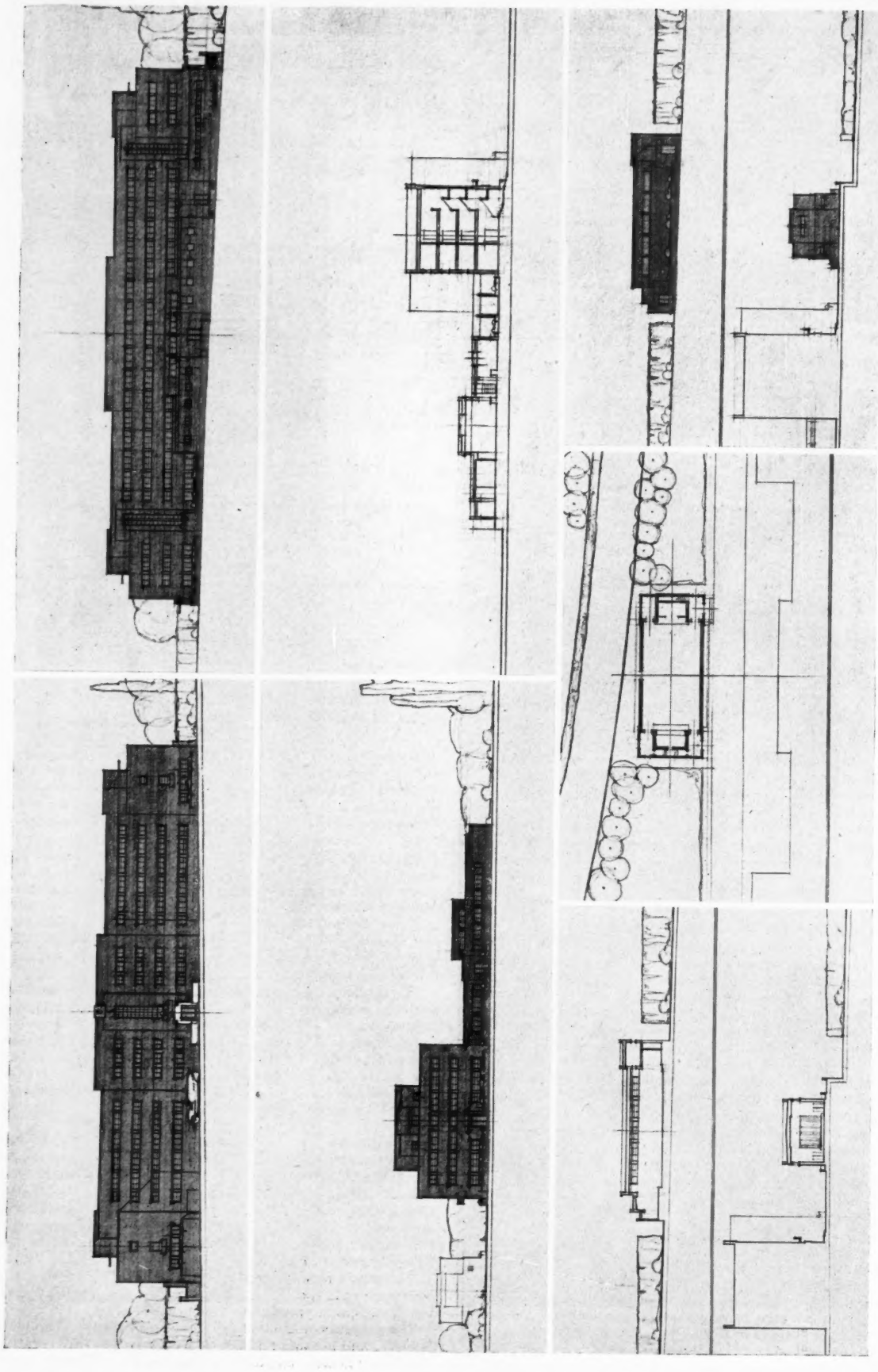
The scullery floors are tiled and the other floors covered with the best quality of thick linoleum on a bed of bitumen to prevent the penetration of damp, and fixed underneath the skirting to avoid the collection of dust round the edges.

A small common room and meeting hall forms the central feature of the design. This common room is heated electrically as the most convenient method for intermittent use and is provided with a fireplace for use in the really cold weather.

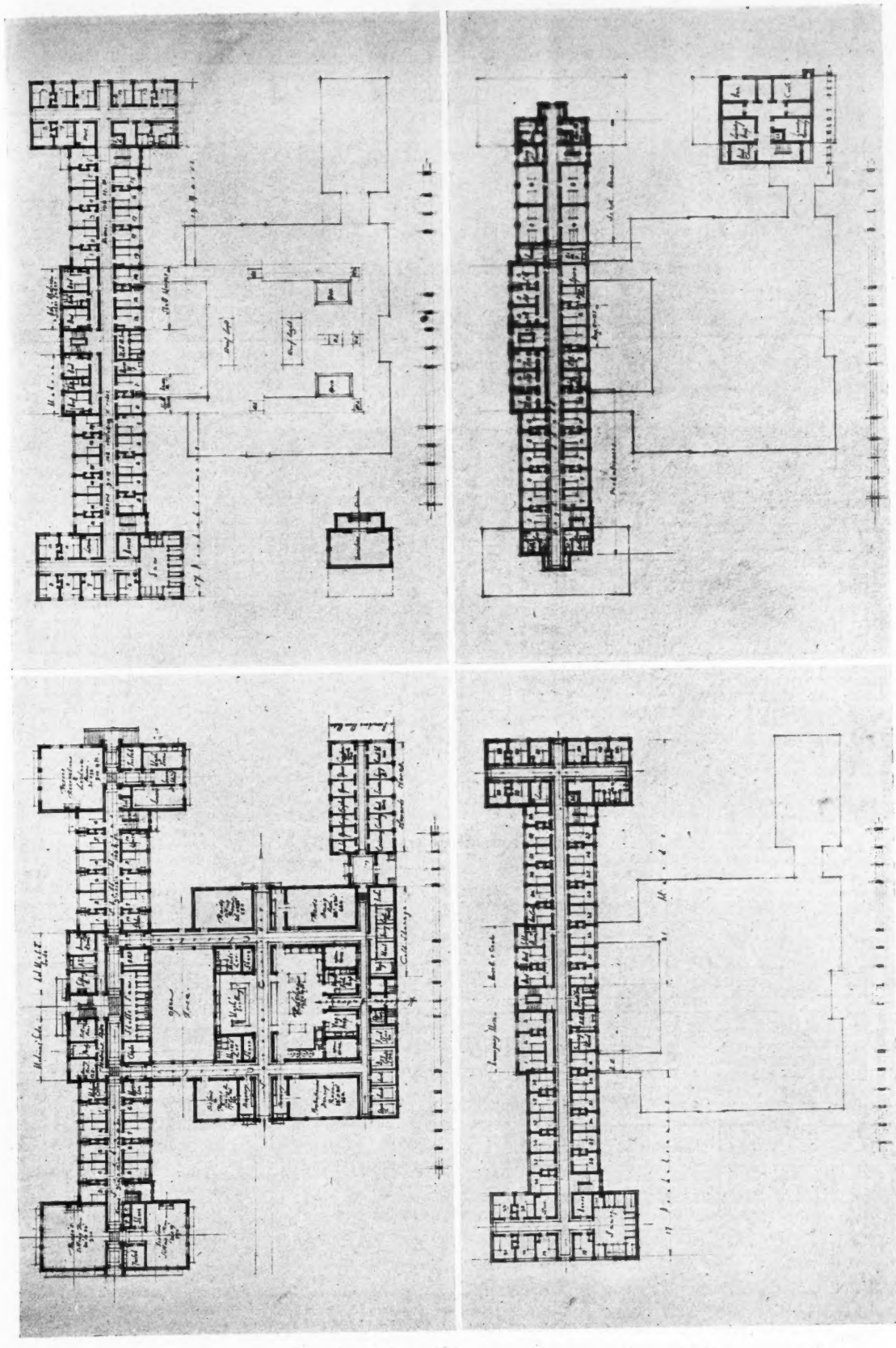
Over the fireplace in the centre is placed a tablet carved in oak with this wording :—These cottages were erected by the Trade Union Movement, and were dedicated on the 31st August, 1934, by Andrew Conley, President of the Trades Union Congress, to the memory of the six agricultural labourers of Tolpuddle, who, in 1834, endured transportation rather than renounce their right to combine in the Friendly Society of Agricultural Labourers.

The cream facing bricks are from Burslem, of Poole, the tiles from Sykes, of Poole ; the ranges are " Triplex " and the domestic supply is by a calorifier.

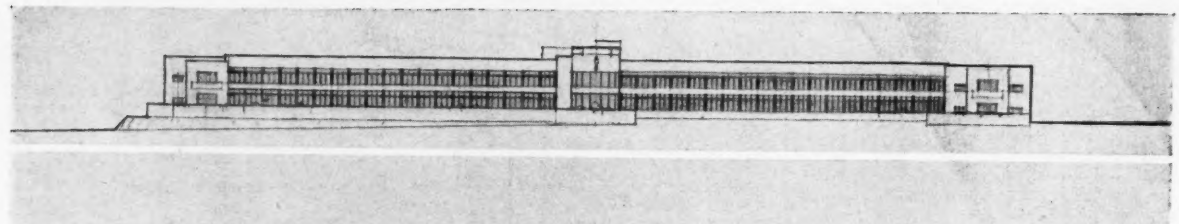
The general contractors were the Co-operative Wholesale Society, and heating and lighting were by the Co-operative Wholesale Society engineering department. Messrs. James Clark and Son, Ltd., were responsible for the glazing.



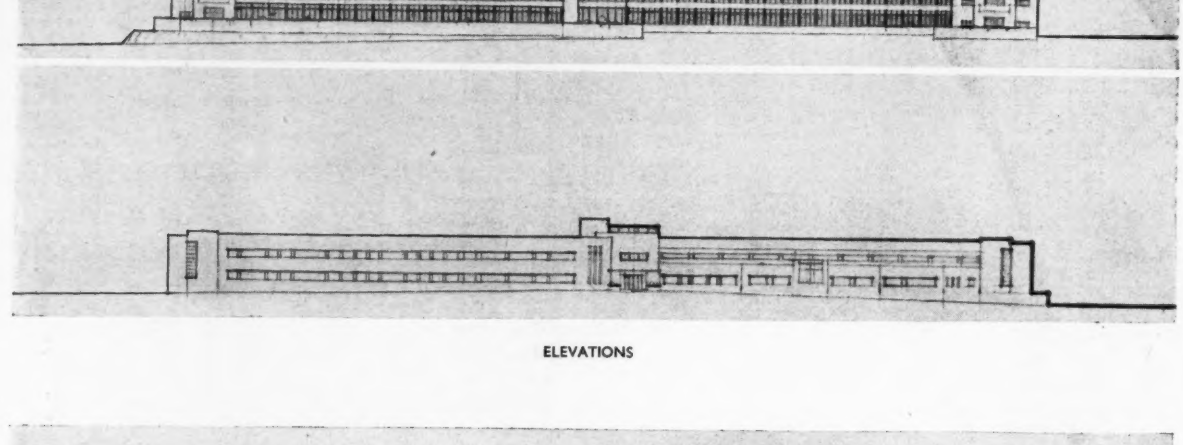
WHITEABBEY SANATORIUM COMPETITION, BELFAST : Nurses' Home and Recreation Hall, Winning Design.
BY MESSRS. R. H. GIBSON AND JOHN MAC GEAGH, F. and A.R.I.B.A.



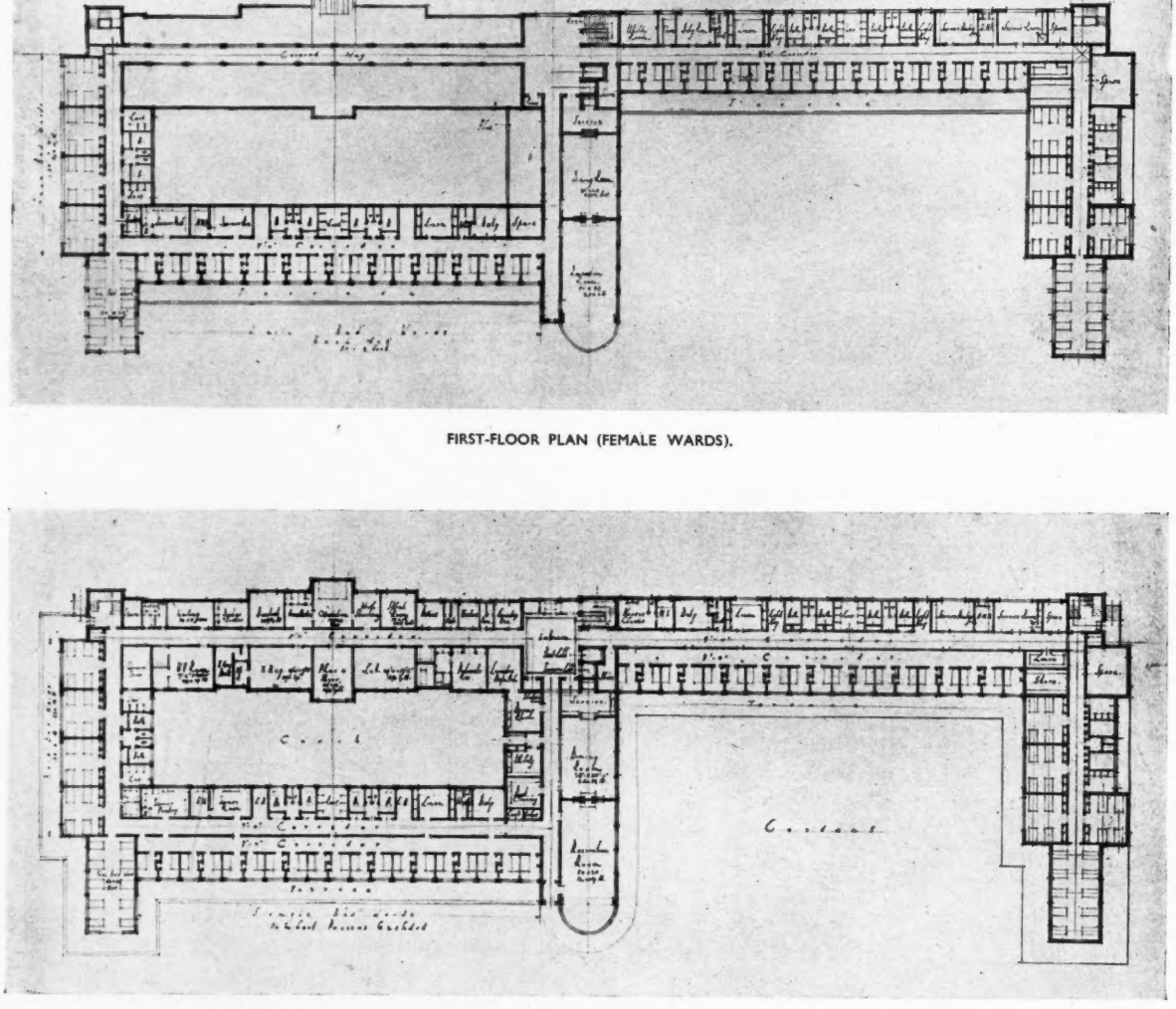
WHITEABBEY SANATORIUM COMPETITION, BELFAST: Nurses' Home, Winning Design.
BY MESSRS. R. H. GIBSON AND JOHN MAC GEAGH, F. and A.R.I.B.A.



ELEVATIONS



FIRST-FLOOR PLAN (FEMALE WARDS).



GROUND-FLOOR PLAN (MALE WARDS).

WHITEABBEY SANATORIUM COMPETITION, BELFAST: Hospital Block, Winning Design.

BY MESSRS. R. H. GIBSON AND JOHN MAC GEAGH, F. and A.R.I.B.A.

ILLUSTRATIONS

PLATES.

Church of St. Alban, Becontree, Essex.

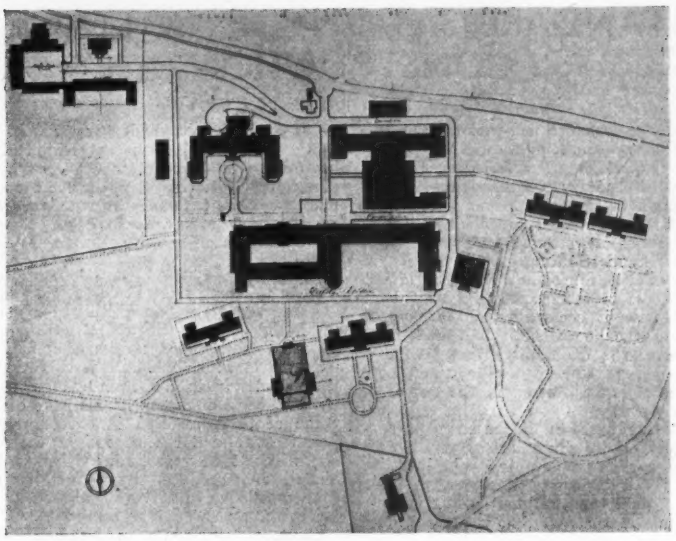
The building of the permanent Parish Church of St. Alban, in place of the little wooden temporary building in which the history of the church commenced, was made possible by the munificence of Miss Violet E. Wills, of Bristol, who gave £14,000 for the purpose to the Bishop of Chelmsford's appeal for Essex churches and schools. The foundation stone of the new church was laid by the donor on July 22, 1933, and the church was consecrated on May 5, 1934, by the Lord Bishop of Chelmsford.

The church has an overall length and width of 162 ft. by 54 ft. 9 in. respectively, and comprises a western tower 22 ft. square on plan and carried up to a height of 82 ft. to the apex of the pyramidal roof, a large nave 87 ft. 6 in. long by 34 ft. wide, a chancel 41 ft. long by 22 ft. wide, and a chapel 28 ft. long by 18 ft. wide, and the usual clergy and choir vestries and organ chamber. A feature of the internal design of the building is the omission of the traditional nave arcading, as this "hall" type of plan in relation to the planning of the chancel gives every member of the congregation a clear view of the sanctuary and altar.

The lower portion or ground story of the tower has been designed as a large vestibule to the western porch entrance, which is incorporated within the base of the tower. This arrangement was primarily due to the axial siting of the building on the corner of Urswick and Vincent-roads, and is one which affords greater facilities on ceremonial occasions and enables the font to be placed in its traditional setting. The omission of the nave arcade afforded the architects an excellent opportunity in the design of the roof. This has been accomplished by a series of six wooden trusses having a clear span of 34 ft., thus dividing the nave walling and roof into seven bays. The trusses are of Columbian pine (left free from the saw), framed and held together by oak pins and composed of timbers of greater bulk than usually found in modern church design. Their design and workmanship have been based on and carried out in accordance with the best examples of mediæval carpentry, and this is particularly noticeable in the case of the roof and ceiling to the chapel. The chancel is roofed and ceiled in a similar manner to the nave, the design of the three trusses employed being a slight variation of the nave trusses minus their hammer beams and large corbelled braces.

Sand-lime bricks, having a Bath stone tint and texture, have been used to face the whole of the internal walling, with the exception of the piers and pilasters of the chancel arcading, which were executed in Clipsham stone. The nave alleyways are paved with Granwood flooring laid to a simple pattern in green and black blocks, and the chancel and chapel flooring has been paved with special tiles of buff and chocolate tints, the design of the floor to the chancel being a simple repeat pattern of St. Alban's cross, which is in the form of a Greek cross. A large organ chamber 28 ft. by 13 ft. was planned above the vestries, and by so doing it was possible to create a symmetrical balance with the chapel on the north side and to obtain ample height for the organ, a point often overlooked.

Externally, the building has been faced with Clipsham stone, as it was the wish of Miss Wills that a stone church should be provided on an estate consisting entirely of brick buildings. Constructionally the external walling consists of a core or hearting of concrete, faced internally with the sand-lime bricks and externally with stone. In addition to the western porch, north and south porches have been provided for admission from Urswick and Vincent-roads respectively. The tower, which is surmounted by an 8 ft. high bronze weathervane, is a landmark for several miles around and is easily discernible from the Thames. The weathervane, designed by Mr. Walter Gilbert, of Birmingham, is composed of a small St. Alban's cross, in the place of the arrow head, with a kneeling figure of St. Alban in the act of prayer (for his parish) opposite, the whole being terminated by a martyr's crown.



WHITEABBEY SANATORIUM COMPETITION: BLOCK PLAN OF WINNING DESIGN. BY MESSRS. R. H. GIBSON AND JOHN MAC GEAGH, F. and A.R.I.B.A.

The altar, reredos and font, by Mr. Herbert Read, of Exeter, and the stained-glass in the east window, by Mr. Hubert Blanchford, of Exeter, were also given by Miss Wills. These features were not designed by the architects. The whole of the nave and chapel benches, choir and clergy stalls, and Communion rails, were made by Mr. A. Robinson, of Westminster, to the design of the architects.

The organ is a two-manual instrument with an electric action throughout of the latest type, built by the John Compton Organ Co., Ltd. The console is detached and placed on the north side of the chancel, opposite the organ chamber to enable the organist to hear the singing of choir and congregation in relation to the organ, and so control the volume of the organ accordingly.

The bells are ten in number, constituting what is known as a "chime" and not a peal of bells, and are operated from a clavier. The total weight is about 14½ cwt., and the bells were cast by Messrs. Mears and Stainbank, The Whitechapel Bell Foundry.

Messrs. William Downs, Ltd., were the general building contractors, and the masonry was supplied and fixed by Messrs. Damer Bros., Ltd. Sub-contractors were as follows:—Chas. P. Kinnell and Co., Ltd., heating installation; T. Clarke and Co., Ltd., electrical installation; The Lawford Asphalte Co., Ltd., all asphalt work; Mr. John Binder, all glazing except east window; Roberts, Adlard and Co., Ltd., roof slating; F. A. Norris and Co., Ltd., steel staircases and ladders; Wm. Bain and Co., Ltd., iron fencing; Arens Controls, Ltd., special window-opening gear; Sevenoaks Brick Works, Ltd., internal facing bricks; Carter and Co. (London), Ltd., floor tiling to chancel and chapel; Granwood Flooring Co., Ltd., nave flooring, alleyways.

Messrs. Milner and Craze, L.R.I.B.A., are the architects.

Frinton Park Development.

This scheme comprises a complete new residential town, covering some 200 acres, on which will be built approximately 1,200 houses. The general lay-out, together with the buildings comprising the shopping centre, the new railway station, the hotel on the sea-front and many of the individual houses, have been designed by Mr. Oliver Hill, F.R.I.B.A., the architect to the estate. In the centre an existing wood has been taken advantage of for the placing of the shopping centre, the town hall, bank buildings, station and road-house adjoining. A new sea wall and promenade is being constructed along the seaboard at the foot of the cliffs, and the reception floor of the hotel is arranged with a cantilevered terrace projecting over the promenade and the sea, while the dining-room, with its continuous glazed windows and the tiered levels of the floor, will give uninterrupted views of the sea to all the tables. The windows will be arranged to slide down below the floor level. On the first and second floors will be sixty bedrooms, each with bathroom *en suite*. To the south of the hotel, at an intermediate level between the principal floor and the promenade, an enclosure is provided, with swimming pool, bathing boxes and independent restaurant. The hotel is approached from the landward side by a double-sunken road, and car-parking and garage accommodation is provided adjacent to the entrance forecourt. The roof level of the hotel has been adjusted so that it does not in any way obstruct the view of the sea from the greensward and the houses behind. The whole of the buildings are being carried out in the contemporary style. The general appearance of the new town will be gleaming white, with parts of some of the buildings colour-washed pink, others treated white and blue, and white and green. The roofs will generally be flat, and loggias and wide landscape-embracing windows will be provided to all the houses. With the co-operation of the Forestry Commission, many trees are being planted over the estate.

Tolpuddle Memorial Cottages.

These cottages have been erected as a memorial to the "Tolpuddle Martyrs," the six agricultural workers who were transported a century ago for upholding Trade Union principles. Mr. Edward Unwin, A.R.I.B.A., is the architect. A full description of the cottages is on page 389.

House at Wotton, Surrey.

This house is built on an attractive site, high up, near Leith Hill. The outside is of local stone, dug on the site. It is of a brownish colour and is used in the local manner, with brick dressings at the angles. Sash windows are generally used. Some of the rooms are panelled in pine. The roof is of hand-made red tiles. The builders were Messrs. Mills and Sons, of Farnham.

Mr. Oswald P. Milne, F.R.I.B.A., is the architect.

Whiteabbey Sanatorium Competition, Belfast.

We illustrate this week the winning design in this competition, by Messrs. R. H. Gibson and John MacGeagh, F. and A.R.I.B.A. Some extracts from the report of the assessor, Mr. R. S. Wilshere, F.R.I.B.A., are given on page 398.

STANDARDISATION OF COTTAGE CONSTRUCTION

By C. BERTRAM PARKES, L.R.I.B.A.

THE average cost of a non-parlour type cottage erected by municipalities is at present about £280 to £295. This price is obtained for houses of ordinary construction with only the minimum of standardisation. Recent research into multi-storied tenement construction has aimed at proving that by careful design and standardisation great reduction in cost is possible. Since, however, the lowest estimated cost of four-roomed flats is about £334 per flat, it seems desirable that the majority of the houses built in this country should be of the one-family type, tenement buildings being reserved for housing those who must necessarily dwell in the centre of the large towns.

The housing problem of the moment consists largely of providing houses at a rental of not more than 7s. 6d. per week, inclusive of rates. To do this it is necessary to make use of the more than adequate re-housing subsidy. While it is a fact that even with flats costing £450 each the rent need not exceed 7s. 6d., it is equally apparent that every effort should be made to reduce the exchequer and local rate contribution to the absolute minimum.

In the opinion of the writer, the cottage forms the most satisfactory means of housing the people from both the sociological and economic points of view. Those in favour of flats claim that by means of properly planned and organised building great speed in erection may be obtained. It is suggested that if cottage building were thoroughly standardised and organised, the speed of production of houses could be made to equal that of tenements.

Cottage building, even when carried out on a large scale, has always been more or less unorganised. It is essential in order to obtain speed and economy to have "a place for everything and everything in its place." If standardisation of cottage construction is to be obtained, it will be necessary for many experts to study the problem and to make experiments. The object of the present article is merely to indicate the lines upon which such research might be carried out.

Planning.

One standard cottage plan is, of course, not desirable. Some effort must be made to allow plans to be designed to suit various needs and aspects. It would be a great advantage from the point of view of cost and speed if a unit could be standardised embodying the scullery, w.c., bathroom and living-room fireplace. These four factors affect the hot and cold water supplies and drainage. If the setting out of these features could be kept constant the way would be opened for the employment of standard pipe runs. Whether it is possible to work on these lines and still leave a certain amount of freedom for planning the remainder of the cottage has not been fully investigated, but it is worth careful study. Possibly it may be necessary to adopt two or three standard arrangements which will allow for every reasonable need. With such standardisation adopted on a large scale it would be feasible to carry into each house a complete set of pipes, already cut and bent, and only needing the minimum of assembly to complete the plumbing and hot water fitting.

Foundations.

The formation of foundations in concrete is quite satisfactory, but it is open to the criticism that it is necessary to wheel and deposit the concrete, and that delay occurs from the placing of the concrete until it is set. The first difficulty might be overcome by some kind of travelling mixer depositing the concrete direct into the trench, but it is not apparent that this would be very practicable on an undulating site. Another suggestion is that the foundations should be of pre-cast units made to interlock. The units should be as large as possible, having in mind the fact that they have to be placed in position by hand. Such a scheme might not compare in cost with the present system, but it has never been tried on a sufficiently large scale to prove its success or failure.

Walls.

There are great possibilities of experiment in walling. Since the war large numbers of patented methods of construction have been invented in which the walls have varied from thin steel sheets to multi-cavity concrete blocks. Most of these systems have died out. Some of them resulted in exceedingly ugly buildings, and for that reason their passing will not be regretted. Others were invented and produced by people having no real knowledge of cottage planning and construction, and were not successful.

In nearly all parts of England brick is a satisfactory material for cottage walls. Brickwork is expensive, but it needs no external treatment in order to make it presentable, and, except in stone districts, it can be made to harmonise with the landscape. There are two objections to the use of bricks—the possible shortage of supplies and the smallness of the unit and consequent slowness of erection. The former could be overcome by increased production, and, as to the latter, considerable speeding up could be obtained by organisation and cutting out all special labours as much as possible. For instance, if a standard position is adopted for the living-room grate, then it should be possible to make large supplies of special bricks for gathering over the flue. It is obviously cheaper to cut an unburnt brick than a burnt one.

Previous attempts to do this sort of thing have nearly always ended in failure, but this has often been due to lack of co-operation on the job. When special bricks are to be used, it is essential that they should be available on the scaffold when needed, and also that the bricklayer should know where to put them. Some form of full-size template is required.

Although brickwork is probably desirable for outside work, there seems to be no excuse for its employment internally. The inner leaf of cavity walls and all internal partitions should be formed of blocks at least three brick courses high. It is difficult to understand why some manufacturers insist on making building blocks 1 ft. high, which do not bond with common brickwork. For cavity work it would be an advantage if each block could be fitted with the necessary tie irons for bonding the inner and outer leaves together. This would prevent the risk of omission. What is required is a reasonably porous slab, of sufficient strength and uniformity, which will provide a good surface with not more than one skim coat of plaster.

The aim in carrying out the walling should be so to plan the construction that every detail is settled before the work is begun, and all cutting, chasing and plugging is avoided. There seems to be no reason why this object should not be achieved. Incidentally, the use of blocks internally would help to overcome a shortage of bricks.

Floors.

When one thinks of the method of constructing a cottage floor, it is really amazing that we continue to build up each floor piecemeal from timbers which have to be cut to length, tenoned, trimmed and covered with floor boards about 5 in. wide, laid separately by a process involving cutting, cramping and nailing. A satisfactory substitute is not easily suggested, but by research an alternative should be found in which larger standardised units are employed.

Roofs.

The normal method of roof construction is open to the same objections as floor building. Larger standardised units are needed, which dispense with cutting on the site. Probably the flat roof offers the greatest scope for the development of standardisation on these lines, but it must be remembered that the construction of a watertight flat roof, which gives good insulation from heat and cold and needs few repairs, is not easy or cheap. It may be, therefore, for this reason and for the sake of the considerations of design, that tiled or slated roofs should be retained. There is still the possibility of simplifying the carcassing.

It is now possible to obtain eaves gutters and down pipes, cut to exact lengths at the factory, coated with vitreous enamel and supplied ready for use, thus cutting out painting by hand.

Joinery.

When steel windows are used, standard sizes are accepted almost without question; obviously wood casements could be made to standard sizes. It would be necessary to agree standard sections for frames, sills, etc., and also to standardise the gauge of brickwork employed in cottage construction. The sizes of standard cottage steel casements are not ideal. The normal four-pane windows, being only 4 ft. high, are too short to allow a reasonably convenient sill level without having too large a space over the head of the window. The five-pane window looks rather elongated, and the transomed types are too elaborate for cottages. What is needed is a wider window with a height of about 5 ft. for ground-floor windows and about 4 ft. for the first floor. It would be an advantage if windows could be satisfactorily and permanently decorated at the works.

Doors are more or less standardised already, but the normal stock dimensions are ridiculous; the variation in height relative to the width is unnecessary—one height (6 ft. 6 in.) being sufficient. The complete door assembly, marketed some years ago, by which linings, architraves, door locks and furniture were installed at one time, would be a distinct advantage, provided they could be produced and fixed at a reasonable price.

Stairs should be standardised into one or two definite types, and the planning of the cottage should be arranged so that they may be installed in complete flights. The modern joinery firm makes staircases so speedily that there seems little advantage in making them of any other material than wood.

Skirtings and similar finishings could be supplied in bundles cut to length for each room. The difficulty of making an accurate fit at the corners would be avoided by pressed metal angles which would cover the ends of skirting and allow for inaccuracies in lengths of walls; scribings and mitres would thus be avoided. Cupboards could all be sent on to the site ready assembled, complete with shelves, with doors hung and fitted with ironmongery. Draining boards should be supported from the sink, thus cutting out plugging. Window boards should be dispensed with and a slab of durable material inserted in the wall when the window is built in.

Sanitary Installation.

Baths, w.c. sets, lavatory basins and sinks should be standardised to efficient designs for housing purposes. Some steps in this direction have been taken, but there are still differences in dimensions which prevent the adoption of standard pipe runs. It ought to be possible with a constant arrangement of bathroom, w.c., living-room grate, hot and cold water tanks and sink, to bring pipes on to the site accurately bent and fitted with couplings, thus making assembly a simple matter, taking the minimum of time. On contracts involving only a hundred or so houses, it should be cheaper to have all pipes bent at a factory than to do it on the job. Unfortunately, it is not possible to adopt this system to-day, because house building is carried out in a somewhat inaccurate manner.

When building with accurately made units the difficulty should not arise. Very careful planning would be necessary, because errors would result in huge losses owing to large-scale production.

An interesting and successful attempt to simplify sink assembly is already on the market and has been used on the Bournville Estate for many years. It consists of a combined sink waste and cantilever bracket. The sink is of ordinary design, except that the outlet is in the middle of one end. Two brackets are built into the wall upon which the sink is placed. One of these brackets contains a trapped waste with inspection grid on the outer side of wall. The sink is placed on the brackets, and the only work necessary is the making of the joint between the sink outlet hole and bracket and the fitting of a length of cast-iron pipe to the trap outgo. This arrangement is perfectly efficient and inexpensive.

For the most part, copper pipes would seem to be preferable to lead for both hot and cold supplies, because they can be readily bent to shape and are sufficiently rigid to allow of transport. Compression and cone joints eliminate all need for heat on the job. Differences of practice occur in various parts of the country on account of the characteristics of the water available, but such differences could easily be provided for.

Grates.

All cooking grates should be self-setting. They could, it is suggested, be arranged to fit into the fireplace opening and be coupled to the flue by one simple operation. At the present time very few grates are really simple to set, and some are quite difficult.

Plaster.

Walls and ceilings finished with plaster are still the most satisfactory for cottages; what is needed is the reduction of plastering to one coat only. This may be done to-day by means of such materials as gypsum plaster-board. In order to reduce the cost of carrying out this work the sheets of plaster-board should be supplied in such sizes that practically no cutting or waste of material would occur. This material is economical in the case of ceilings where joists are available for fixing, but it is not so when counter-lathing is required, as on walls. If blocks with true faces were used in place of brickwork for internal walls, one coat of plaster would be sufficient.

Electrical Work.

Many electrical components are standardised to a certain extent. With regard to the wiring, it would be an advantage to have all runs laid out before the building is begun. This would allow chases to be provided where necessary and all fixing for switches, ceiling roses, etc., built in.

Gas-fitting.

It is probable that no very great economy could be made in gas carcassing because of the necessity for gas-tight joints in all pipes. It would, however, be possible to provide chases, and to have all pipes cut to length, screwed, tapped and painted in the shop so that erection would proceed very rapidly.

Painting.

Painting is, naturally, mostly handwork, and must be done after other trades have finished. Nevertheless, by careful planning and organisation many things could be fixed ready painted. In housing work the spraying machine for distemper, etc., has not been used to a great extent. It might be economical to employ an electric sprayer run from the house wiring. In order to do this, it would be necessary to make arrangements with the electric supply authority. Paint manufacturers, by means of research, ought to be able to produce materials which could be applied in one coat only, and if this were done the saving in labour would be considerable.

Research.

An attempt has been made to suggest possibilities for the speeding up of cottage building and for the reduction of cost. Some of the ideas are at present workable, many of them need to be developed, whilst others may be found inexpedient. Research by practical men—architects, builders, chemists, physicists and manufacturers—is necessary if standardisation is to be successfully applied. Naturally, the outlook of each of these classes of men will differ, but it should be possible by reasonable co-operation to travel a long way towards the economical and speedy building of cottages.

THE BRITISH STANDARDS INSTITUTION

It is widely recognised that a considerable development of standardisation of building components will be necessary if the great programmes of building work confronting the country—especially those of housing and slum clearance—are to be promptly, efficiently and economically dealt with, and in this connection it is interesting to recall something of the valuable work that has already been accomplished by the British Standards Institution. First of all, a few words as to the constitution of the body. The B.S.I. is a co-operative body representative in the main of producers and users in the technical industries, such as the iron and steel, the electrical, the chemical, the building, the bridge-building, road-making, railways, shipbuilding and coal industries. It is supported by the Government but is free from any Government control. It is financed by voluntary subscriptions from the various trade and technical organisations and has a Government grant of £3,000 a year, as well as the assistance of over 400 Government technical officers. It has some 600 committees, and holds over 1,000 meetings every year. It has issued several hundred British Standard Specifications, some 200 of which are related to building.

The British Standard Specifications: (1) Protect purchasers by providing them with a recognised quality at a reasonable cost. (2) Protect manufacturers from unfair competition, as they give an adequate means of comparison. (3) Widen the sources of supply. (4) Aid prompt delivery. (5) Stabilise employment by enabling the manufacture of stock in slack times. The work of the B.S.I. is more in the nature of co-ordination than of actually setting up standards in the ordinary sense of this term. One of the great benefits of the work of its many standing Committees is the replacing of the enormous number of varying specifications used by industrial bodies and persons by one nationally agreed specification, when this will equally well serve the purpose.

These specifications are widely employed, some 113,000 having been sold and distributed during the past year, and in all nearly two million have been distributed and sold. They are used by Government Departments, by municipalities, who under the standing orders of the Ministry of Health will be obligated to purchase to British Standard Specifications, and not permitted to contract out of them except on a vote of the whole Council; they are used by the Crown Agents for the Colonies, by Overseas Governments and by manufacturers themselves.

Building Specifications: New Schedule.

The B.S.I. is adopting a new method of listing those of its specifications which apply to building and its allied trades, and has recently issued a new publication under the title "Schedule of British Standard Specifications Applicable to Building Works" (CD. 4000), setting forth the specifications under the usual trade headings in the order adopted in general specifications for building works. The B.S.I., with the co-operation of the professional institutions and trade organisations, is circulating the schedule widely among architects, surveyors, engineers, builders, etc., as well as to a large number of individuals. There are now, as we have said, as many as 200 British Standard Specifications available to the building industry, many of which, it is felt, are not fully known.

The Building Divisional Council, under whose supervision the new schedule has been prepared, is of the opinion that the pamphlet will be of considerable value to those engaged in building and its allied trades, particularly to engineers and surveyors of local authorities, in view of the issue recently by the Minister of Health of revised Standing Orders (Circular No. 1388) relating to the use of B.S. Specifications, by enabling them, when drawing up their specifications, to refer quickly to the references of the appropriate B.S. Specifications instead of, as at present, having to look through the whole of the general index. Moreover, it is felt that in taking this step people will become more fully acquainted with the number of specifications available which are really useful to the building industry and will be encouraged to make greater use of them.

The long experience of the British Standards Institution has abundantly shown that the quality and general suitability of materials are best assured through establishment of unified standards, hence the continuous efforts of its 600 committees. These committees are as fully representative as possible of all interests, and came together, not with the object of setting up ideals which might be too expensive for industry to adopt, but of unifying their requirements and adopting, in the form of British Standard Specifications, on the basis of mutual consent, what is most suitable in present practice. Thus it will be seen that to a great extent the British Standard Specifications simplify the work involved in the manufacture and purchase of materials, for they not only represent what the manufacturer and user consider to be most useful, but also supply an equitable basis for the comparison of tenders, which is a most important feature of the work.

A close examination of the new schedule will show the extensive field already covered. It should be noted that the British Standard Specifications are reviewed periodically, and users of the specifications can be assured that when specifying or working to a B.S. Specification this will always be automatically up to date. Readers may obtain copies of the new Schedule (price 8d., post free) under reference CD.4000, and copies of the B.S. Specifications referred to in the Schedule, from the Publications Department, British Standards Institution, 28, Victoria-street, London, S.W.1.

NOTES ON CONCRETE CONSTRUCTION

The last few years have seen a remarkable increase in the number of books dealing with concrete and reinforced concrete, chiefly due to a recognition of the fact that the whole subject cannot be adequately treated in one volume. So far as the specialist is concerned, the book before us * suffers from the attempt to cover so wide a field within 236 pages, but the student is given a very clear idea of the principles of reinforced concrete design, with a number of useful worked examples. A good bibliography and references in the text to other books inform the reader of the sources of further information. The subjects of materials and construction are discussed, and loads and working stresses and the principles of design are dealt with on familiar lines, these sections being followed by 100 pages of worked examples of the design of various members and structures. There is a small section on pre-cast concrete products, and the remainder of the volume comprises photographs of structures in which the company's cements have been used, notes on the properties and manufacture of Portland cement, with illustrations of the Ketton works, and notes on Ketton freestone and the company's selling organisation.

* Notes on Concrete Construction and the Principles of Design in Reinforced Concrete. Published for the Ketton Portland Cement Co., Ltd., by Sir W. C. Leng (*Sheffield Telegraph*), Ltd. Price 7s. 6d. net.

THE BUILDING EXHIBITION

LORD BALFOUR OF BURLEIGH is to open, at 4 p.m. on Wednesday next, the 19th Building Trades Exhibition, at Olympia, when Sir Giles Gilbert Scott, R.A., P.R.I.B.A., will occupy the chair. A number of the leaders of the industry will also speak. The Exhibition is expected to be the largest and most representative yet held.

PROGRAMME OF FUNCTIONS.

Following is a list of meetings at and visits to the Exhibition :—

Wednesday, September 12.
Opening Function.
Stock Brick Manufacturers' Association. Meeting.

Thursday, September 13.
London Association of Master Decorators. Visit.

Friday, September 14.
Institution of Structural Engineers. Visit. Judging of Students' work.

Saturday, September 15.
Sheffield and District Clerks of Works and Building Foremen's Association. Visit.
Incorporated British Institute of Certified Carpenters. Visit.
Lancashire Guild of Bricklayers. Meeting.

Monday, September 17.
Society of Estate Clerks of Works. Visit.

Tuesday, September 18.
Cast Concrete Products Association. Meeting.
Institution of Sanitary Engineers. Visit.
English Joinery Manufacturers' Association. Meeting.

Wednesday, September 19.
National Federation of Clay Industries. Meeting.
London Master Builders' Association. Visit.

Thursday, September 20.
Ceramic Society. Meeting.
Institution of Municipal and County Engineers. Visit.
Southern Counties' Federation of Building Trade Employers. Visit.
"Under Forty Club" (Public Utility Housing). Meeting.

Friday, September 21.
Chartered Surveyors' Institution. Visit.
Land Agents' Society. Visit.
Garden Cities Association. Meeting.
Architects' Ball.

Saturday, September 22.
Association of Architects, Surveyors and Technical Assistants. Visit.
Incorporated Clerks of Works Association of Great Britain. Visit.

Monday, September 24.
South-Eastern Federation of the Brick Trade. Meeting.
Ballast, Sand and Allied Trades Association. Meeting.

THE BUILDING RESEARCH EXHIBIT.

The Department of Scientific and Industrial Research is presenting on a large stand in the gallery (Nos. 82-84), Gallery) an exhibit illustrating much of the building research work carried out under its control. Most of the work shown has been carried out at the Building Research Station, Watford, the main exception being the timber portion of the exhibit, for which the Department's Forest Products Research Laboratory at Princes Risborough is responsible.

The exhibit covers structural steel, plain and reinforced concrete, cement and cement products, natural stone, limes and plasters, brick and timber; codes of practice for the use of certain of these materials, and aspects of heating and lighting involved in securing comfortable conditions in a building. Several examples are included of researches carried out with the financial support and close co-operation of technical societies and industrial associations.

One of the chief of these co-operative researches is that dealing with steel-frame buildings, carried out under the Steel Structures Research Committee, to which work the British Steelwork Association makes a substantial contribution. The work of the Committee has already led to savings amounting to as much as 20 per cent. in the cost of steelwork in steel-frame buildings, and the Committee has issued recommendations for a new code of practice for the use of structural steel in buildings, which has been adopted by many building authorities. The exhibits on this subject illustrate the determination of stresses in complicated structures by the use of models, the measurement of stresses in full-size steel-frame structures, and investigations on riveted and bolted connections and on the uniformity in strength of welded joints.

Various aspects of the work on reinforced concrete are represented by apparatus for measuring the creep of concrete in tension and for following shrinkage cracking in restrained concrete members, as well as scale models for determining the redistribution of stresses in loaded members. Other exhibits dealing with concrete demonstrate the evolution of heat and its influence on the development of strength in mass concrete, and the relationship between strength and the quantity of mixing water used.

A selection of examples are shown illustrating failures in concrete, investigated by the Building Research Station, resulting from the use of large proportions of fine sand, unstable aggregate or aggregate containing gypsum or a high proportion of organic matter. Further exhibits deal with lightweight concretes, including a test use to detect unsound clinker; the mechanism of surface changes in cast stone during natural exposure; and the choice of pigments for the production of coloured concrete.

A striking exhibit concerns the measurement of the transitory forces set up in reinforced concrete piles during driving. These stresses, which are the highest likely to be encountered during the life of the pile, are measured by an ingenious apparatus, of which a model is shown. Quartz crystals are embedded in the pile, and translate the momentary mechanical stresses into electrical impulses, which are made to deflect a beam of electrons in a cathode ray oscillograph. This instrument is the most nimble recorder known to science. Special interest attaching to this work is that apparatus developed in the first place in another establishment of the Department, for radio research on atmospherics, is being utilised in building research. Other exhibits on the stand deal with the action of sea water on reinforced concrete; pozzolanas, the resistance of cement and concrete products to chemical attack, and the constitution of cement clinker and set cement.

Turning to the work of natural building stones, various aspects of stone decay and the problems involved in the preservation, cleaning and restoration of stone structures are illustrated; methods of assessing the quality of samples of Portland stone by laboratory tests are also shown.

An exhibit of brick and brick-masonry illustrates the procedure used to determine the strength of individual bricks and brick-masonry walls, and the effect of soluble salts in producing both surface efflorescences and disruption of the brick. The method of test used to assess the liability to efflorescence is also shown, besides various researches in hand on sand-lime bricks. Other sections deal with plaster, plastering sands, and paint failures on plastered surfaces; with the cause and prevention of pattern staining of plasters —that is, the appearance of dark stains on plaster on lathing backings on ceiling and wall surfaces; and with problems concerning bituminous roofing materials.

The section dealing with heating, ventilation and natural lighting includes special instruments devised for comparing different methods of heating, the use of air spaces and metallic surfaces in providing thermal insulation, and the problem of the exclusion of solar heat.

An interesting instrument, known as the "Heliodon," developed at the Building Research Station, is shown. This instrument reproduces the apparent motion of the sun and, when used in conjunction with simple models of a proposed building, enables natural lighting conditions, both around the building and within its several rooms, to be easily predetermined.

In the timber section, exhibits will be found illustrating the seasoning of timber, including a display of matched materials, which demonstrates that timber does not become more stable with age, but that the shrinkage of old timber is as great as that of new. Other exhibits in this section deal with woodworking, wood structure, wood preservation and the mechanical strength of timber. The destruction of timber by insects and its prevention is also demonstrated, while a number of interesting exhibits deal with dry rot and other forms of fungal attack on wood. These include models illustrating various types of faulty construction and other conditions favourable to outbreak of dry rot, together with a drawing showing how these faulty conditions can be avoided.

A special guide to the exhibit will be available free to visitors to the stand, and publications describing the work in greater detail will be on view for inspection and purchase at the information bureau on the stand.

SCHOOL EXHIBITS.

We give below some particulars of the exhibits of schools associated with the architectural profession and the building industry.

Army Vocational Training Centre, Aldershot.

Here is a stand of special interest to the employer who has followed the controversies about apprenticeship, intensive training and so forth, both the stand and the exhibits being the work of vocationally-trained soldiers at Aldershot. Visitors to the 1932 Exhibition may remember that in the competitions open to polytechnics, technical and trade training schools, the Army Vocational Training Centre took several prizes and was awarded the first prize for the "best stand." The students are selected warrant officers, non-commissioned officers and men of the British army, who pay a relatively high fee for their training and are keen to "make good" on their return to civilian life. After the initial instruction in the use of tools, the training is carried out almost entirely on contract work, both in and out of the Centre, and is not of the more usual "set exercise" type. Building and other contracts covering all normal types of erections, alterations and repairs are undertaken within the military area. All this work is carried out by the students under practically normal industrial conditions with instructors acting as foremen. This form of training ensures a full experience of the complete processes as applied to the different trades, a better understanding of the sequence of work and co-operation of trades, and the experience of, and the opportunity to study, problems which are seldom met in the workshop and which never arise in a school. The exhibits include examples of brickwork, plastering, carpentry and joinery, plumbing, decorating, signwriting, welding and smithing, and visitors will see in a limited way the scope and standard of the training. Employers and others interested are invited to visit the Training Centre at Aldershot, where they can see the students at work and the extent of the training. It is hoped that employers who have suitable vacancies to offer from time to time will apply to the Centre. The Commandant will be pleased to answer any inquiries or give further information.

Chiswick Polytechnic School of Art.

The exhibit of this Polytechnic (Stand 24, Gallery) includes specimens of students' work executed in the Department of Interior Decoration, *i.e.*, painting and decorating, metal work, designing for decorative schemes,

etc., and also a display of architectural and topographical lay-out models. This school offers a sound training for those who desire to become creators of artistic and workmanlike designs for all branches of industrial art where sound construction and fine workmanship are the first essentials. Throughout this school the experimental spirit prevails, and original ideas which comply with modern requirements in a practical way are given every encouragement. The stand itself, which was designed and constructed in the school, displays only a few of the school's activities.

L.C.C. Hammersmith School of Building and Arts and Crafts.

The stand of this school (No. 33, Gallery) is definitely modern in treatment, and has been designed, executed and erected by the students in the Junior Building School, with the assistance of their masters. Exhibits are shown of the work of the two sections of the school, namely, the Building and Art departments. The niches at the sides are hung with printed fabrics which set off effectively pieces of modelling executed in the Art department. A frieze of posters, also done by students in the Art department, provides an effective finish to the walls. The Building school, which was opened four years ago to serve the West End of London, has developed rapidly, and has junior day and evening departments. Provision is made for the training of students in the crafts as well as the professional side of the building industry. Most of the exhibits have been executed by students of the ages 14 to 21, and include plumbing, masonry, brickwork, joinery and plastering. The woodcutting machinists' work and cabinet makers' work are embodied in the furniture, which is on a dais in the centre of the stand.

Kingston Technical College and School of Art.

The stand of this school has been constructed by students of the carpentry and joinery classes from one of a number of designs submitted by students of the School of Art, who have also been responsible for the lettering and decoration of the stand. The exhibits comprise examples of work from the junior technical school, the school of art, and the following sections of the college building department :—(1) Architecture—a few drawings by students in connection with the examinations of the R.I.B.A.; (2) Carpentry and Joinery—staircasing, handrailing, louvres, window fanlight and other examples of internal and external carpentry and joinery work; (3) Bricklaying—flat arch and wheel arch with moulded base and cap: (4) Painting and Decorating—examples of plain painting, graining, gesso relief decoration, heraldry and lettering; (5) Plumbing—specimens of joint wiping, copper and iron bending, lead burning, lead bossing, sheet copper work, and other examples of internal and external plumbers' work. Much of last session's work has not yet been received back from the various examining bodies, so the display has been supplemented by work of the previous session.

The L.C.C. School of Building, Brixton.

The stand of this school is of rather unusual character, and has been designed and executed by the students and staff. Following are the principal exhibits :—Brickwork section : A corkscrew column, a fluted column, an octagonal chimney, and a raised panel. Carpentry section : Some interesting exhibits in hardwood, teak frame sashes, a wreathed handrail, and a circular stallboard framing. Plastering section : A vase and pedestal, a truss moulded and cast, a parapet, cornice, frieze, panel, trusses, architraves, and a grotesque mask. Plumbing section : Some matched copper and iron bends, and good quality sheet lead work and a lead rainwater head. Masonry section : A step newel and handrail, a geometrical stair with cut string, and a pendentive dome and a lettered tablet in polished limestone. Decoration section : Panels of lettering and graining, etc.

The Northern Polytechnic.

The exhibits of this school consist of a great variety of craft work executed by students. All of the building crafts are represented, and the work has been executed by boys up to 16½ years of age, who are being trained to become apprentices and improvers, and also by senior evening students who are already engaged in the industry.

Trades Training School.

The Trades Training School, founded 41 years ago by the Worshipful Company of Carpenters for the improvement of craftsmanship in the building trades, is under the chairmanship of Mr. F. Adams Smith, F.R.I.B.A., Sir Banister Fletcher, P-P.R.I.B.A., F.S.I., being the Director. Associated with the Carpenters' Company are the Worshipful Companies of Armourers and Brasiers, Joiners, Painter-Stainers, Pewterers, Plaisterers, Tylers and Bricklayers, and Wheelwrights. The following exhibits are displayed :—Carpentry : Scale models of roofs, turrets, flèches, lych gate, and half-timbered house. Joinery : Show-cases, niche, panelled doors of various types, linings, pediment, sashes, elliptical dome, etc. Handrailing and Stairbuilding : Open newel and dog-legged staircases and specimens of handrailing. Masonry : Scale models of spiral turret-stair, gate pier, dome, tracery window, etc. Plumbing : Specimens of wiped joints, rainwater heads, fountain, sundial, birds' bath, garden and other vases, lead burning, etc. Metal Workers : Specimens of smith's work in staircase rail, grilles, panels, fire dogs, and forge work; specimens of brasier's work in grilles, fire screen, fender, umbrella stand, brass lantern, caskets, vase, etc. Wood Carving : Specimens of carving and drawings from casts. Painting : Specimens of painting, graining, marbling, sign-writing, coat of arms, etc. Stone Carving : Specimens of carving and lettering, and casts from clay models. Plastering : Scale models of panelled ceiling, cornice, truss, and pedestal with niches. Wheelwrights : Specimens of motor body building, section of horse van and wheel. Bricklayers : Sundial and niche.

BUILDING TRADES STUDENTS' WORK.

City Companies' Prizes for Exhibits.

Four City companies have offered prizes for finished work shown at the exhibition by students of the technical schools. The following schools are exhibiting :—Trades Training Schools, Great Titchfield-street, W.1; Northern Polytechnic, Holloway; Kingston Technical College; Army Vocational Training Centre, Aldershot; Chiswick Polytechnic; L.C.C. School of Building, Brixton; L.C.C. Hammersmith School of Arts and Crafts. The prizes and their donors are as follows :—

The Worshipful Company of Tylers and Bricklayers.—£5 5s. for the best piece of finished brickwork; also diplomas.

The Worshipful Company of Masons.—£5 5s. and a silver medal for the best finished work exhibited in connection with masonry.

The Worshipful Company of Pewterers.—£20 for the best exhibits of plumbing, and £5 for the best work exhibited by a competitor from the Army Vocational Training Centre, Aldershot.

The Worshipful Company of Painters.—£5 5s. for the best work in graining and marbling.

The Promoters of the Building Exhibition.—Four prizes to the value of £5 each.

The judging will take place on Friday, September 14, at 2.30 p.m. The judges will be :—Mr. H. A. Grover (Masons' Company), Mr. H. Justus Eck, M.A., M.I.E.E. (Pewterers' Company), Mr. E. F. Dickins (Tylers' and Bricklayers' Company), Mr. C. L. Roberson (Painters' Company), Mr. Hubert Lidbetter, F.R.I.B.A., Mr. F. Adams Smith, F.R.I.B.A., F.S.I., Mr. G. W. Eyles (ex-President, Clerks of Works' Association), Mr. E. J. A. Burlington (foreman mason, Messrs. Trollope and Colls, Ltd.), Mr. T. Wilson (foreman plumber, Messrs. James Carmichael, Ltd.).

PLANNING THE MODERN FLAT.

How architects are dealing with the problem of providing homes for city workers near their work and yet at moderate rentals is shown by means of full-scale examples of contemporary interior architecture in the exhibit arranged by Mr. G. E. W. Crowe in the Grand Hall Gallery. The rehousing of slum dwellers and the housing of black-coated workers and lower-salaried professional men and women near their work are, as many know, the two great architectural problems of the day.

In planning for expensive sites, it is pointed out, some sacrifice of traditional requirements has to be made by architect, owner and tenant, but modern design and space-saving equipment have done much to minimise the sacrifice. The kitchen unit is used by Mr. Crowe because it is most productive of ideas in modern planning, and because the kitchen is where time, space and money may be easily squandered, whether in a slum clearance scheme, a block of flats, or estate development. One of the examples, designed by Mr. De Soissons, F.R.I.B.A., S.A.D.G., is a replica of the kitchen, bathroom and entrance hall of a flat now in course of construction on the Prince of Wales's Duchy of Cornwall Estate at Kennington, S.E. (Surveyor : Mr. H. F. Chambers, F.S.I.) It shows how the lay-out of domestic equipment is being improved upon in modern estates.

Business and professional people will be interested in the reproduction of "The 1935 Flat," designed by Sir Aston Webb and Sons for Associated London Properties, which is to be erected in the shadow of Westminster Abbey. It is one of the most expensive building sites in London, but the rents will vary from £120 to not more than £150 a year. The total area occupied by the flat is only 34 ft. by 17 ft.—yet each flat will comprise bedroom, living room, kitchen and bathroom. As the essential furniture forms part of the fittings, the cost of furnishing will be negligible. The living-room fittings are not only designed for utility, but also to form part of the decorative scheme. A feature in the kitchen is a combined gas refrigerator and cooker.

A third example is a kitchen designed by Mr. Joseph Emberton, F.R.I.B.A., for the Chapman Estate flats in Stepney, which were opened recently. These are flats which are being made to pay at rents of 16s. to 18s. a week, and one of the ways of doing it is by the use of what the architect describes as a "workshop kitchen," where the attractive design is evolved from strict concentration on essentials.

A National Conference of Public Utility Societies.

The Garden Cities and Town Planning Association, 3, Gray's Inn-place, W.C.1, has convened a National Conference of Public Utility Societies at Olympia on Friday, September 21. Two matters of supreme importance, the Association states, now require the consideration of all societies. The Government have promised to introduce a new Housing Bill in the next Session of Parliament, and it is important that the new facilities to be given to societies should be fully discussed before the Bill is published. The chair will be taken by Dr. N. Macfadyen, M.B., D.P.H., and subjects to be discussed are : 11 a.m., "The New Housing Bill, and what the Government could do for Public Utility Societies"; and 2.30 p.m., "Proposals for a National Federation of Public Utility Societies." Full details are available from Mr. A. T. Pike, Secretary, Garden Cities and Town Planning Association, 3, Gray's Inn-place, W.C.1.

PLANNING TO AVOID NOISE

By AN ARCHITECTURAL CONTRIBUTOR.

ALTHOUGH scientific investigation has shown noise to lessen output of work and cause errors, in addition to being unpleasant, little thought appears to have been given to planning to avoid noise, apart from premises for special purposes, such as broadcasting and the "talkies."

Construction to avoid noise is like construction for any other particular purpose, one of compromise. There is always a point where some sacrifice in efficiency, in the particular question in hand, has to give way to avoid lack of amenities in other respects; but if reasonable consideration is given, the evils resulting may be lessened, without in any way lessening other amenities. From a building point of view, the two main ways of avoiding noise are in the selection of the site and in the construction and design of the building.

The Site.

The development by cul-de-sac—that is, short streets branched off main roads opening into squares—is a system which has been used in modern town planning, principally with the idea of saving road costs. It is also a system of town planning which renders the office and the home less subject to traffic noises, these culs-de-sac having only to consume their own noises and those of their immediate neighbours. Such squares are found in many of the older towns which were laid out before the "checker-board" period. Vegetation surrounding a building tends to decrease noise. Apart from the actual sounds given off by contact of a body with paving, trees and grass will absorb noise, when a bare paved yard will reflect it. More noise is given off by volume of traffic at road crossings than on a straight run or at a traffic circus, owing to horn-blowing, braking and starting.

Planning.

Street noises are greater where the streets are narrow and the buildings high. The same height of building, isolated, would be quieter with the same volume of street noise. It would be expected that a street developed with buildings having set backs of the elevation would not be noisy as the same street having the buildings with the elevations on one plane.

Where possible, the windows of rooms in which quiet is essential, such as meeting-rooms, should be planned to open on to areas, or on to spaces on the opposite elevations to public streets, or on the topmost story above the cornice, a cornice overhanging being a great barrier to street noises.

In the municipal and government buildings in the Tropics, it is not unusual for access to rooms to be obtained by open corridors round the internal area, the windows of the rooms opening upon the street. Greater quiet would be obtained by a reversal of this. Artificial ventilation during the period of meetings is another method of shutting out noise. If artificial ventilation is by exhaust fans, these fans should draw from internal or back areas. If access must be from a noisy street, then the shaft should be long and of a sound-absorbing material.

Windows.

Noises from outside the building, such as traffic noises, find their way inside principally through windows, directly when open, and, when closed, owing to the glass being the thinnest material enclosing the rooms. While plate glass will exclude more noise than sheet glass, greater value than thickness of glass is obtained by a space between two sets of glazing, the glass being in separate sashes, each sash having its frame. The frames should not be in contact, and the greater the distance apart of the sashes and the glass the better the results. Smallness of the square of glass lessens the passage of noise. With small squares there is less vibration from passing traffic, and less reflection than with squares of large areas. Heavy wooden bars will deaden sound and tend to stop vibration.

It is conventional to light and ventilate single-story office buildings and the topmost story of an office from the elevations, as lower stories. Greater use might be made of "north" lights in roofs, either leaving the walls without windows, or, if necessary to the elevation, making them fixed, obtaining additional light and all ventilation through "north" light in the roof, where there would be less noise to penetrate.

With existing windows, a considerable amount of comfort is obtained by a glass screen on the window-board which, when the window is opened, deflects much of the sound upwards and above a level with the head of a person sitting at a desk.

Floors.

Where the lessening of noise is by a cavity, whether horizontal or vertical, independent support, though usually more costly, should give better results. With walls it means double or nearly double strength, with loss of floor space. With ceilings the span has to be bridged twice. This means greater thickness of floor, with corresponding external walls, greater heights for lifts, stairs, etc.

With floors, suspension is the next best thing. This can be carried out by holding up the joist carrying the ceiling by bolts, the bolts being provided with a large washer, the washer having a seating of felt, fibre board, rubber, etc. Ceilings low in comparison with the area tend to deaden noise; high ceilings to small rooms create echo.

The old plasters of sand, lime and hair, or wood laths, were better sound absorbers than are the hard plasters, or metal laths. There are plasters which claim to be sound asborbers, and plaster finished with a rough surface is better than smooth, as the roughness breaks up sound reflection.

As with plasters, so with paints. A hard smooth paint reflects sound, while a paint containing a number of pores will absorb the sound, and one with a rough surface reflects it less. Thickness of paint effects the sound absorbency. Paint surface over which granulated cork has been thrown while the paint is tacky, and a further coat given, will absorb sound, there being a rough surface and a thick coat.

There are numerous materials which tend to stop the spreading of noise created within the room, such as conversation, a noisy typewriter, etc., and these materials will also tend to absorb noises coming in from outside. Upholstery is a sound absorber. A heavy curtain across a plastered surface, by stopping the reflection of sound, has given a considerable degree of greater quietness.

In the actual room, in adjoining rooms and rooms below, a floor covering, such as a thick carpet or felt and carpet, will not only absorb noises but prevent the actual noise of footsteps which would be made by contact with a hard surface. Where a carpet is unsuitable there are compositions, rubber, cork, etc., floor coverings, which are quieter than boards or tiles.

For mechanically drawn vehicles, noiseless floor and noiseless road coverings, such as rubber, have little value, as the noise from a mechanically drawn vehicle comes largely from the engine, and wheels can be dealt with by rubber tyres.

London Chamber of Commerce.

Prince George will officially open the new building of the London Chamber of Commerce at the junction of Cannon-street and Queen-street, E.C.4, on Wednesday, October 10. The Lord Mayor, Sheriffs, and representatives of many branches of trade and commerce in the City of London will attend the ceremony. The new building has been planned by Messrs. Gunton and Gunton, FF.R.I.B.A., Empire House, St. Martin's-le-Grand, E.C.

WHITEABBEY SANATORIUM COMPETITION, BELFAST

Mr. R. S. Wilshere, F.R.I.B.A., the assessor in this competition, has made his award as follows :—

1st (500 guineas), Messrs. R. H. Gibson and John MacGeagh, F. and A.R.I.B.A., 16, Donegall-square South, Belfast.

2nd (200 guineas), Mr. E. C. Samways, 17, Ardgreenan-drive, Belfast.

3rd (100 guineas), Messrs. Blackwood and Jury, M.R.I.A.I., 41, Donegall-place, Belfast.

The winning design is illustrated this week.

We take the following notes from the assessor's report :—

The design placed first provides a scheme which is very successful in co-ordinating the new buildings required with those existing buildings it is desired to retain. It gives a grouping and lay-out which will be convenient and easy to supervise and economical to administrate. The scheme is particularly successful in that it achieves this without a sense of overcrowding, which is noticeable in several of the other schemes submitted. This is largely achieved by the clever lay-out of the new hospital block.

In this building the authors have produced a plan which is simple, direct and easy to control and supervise, and of such formation that the frontage is reduced to a length that it is reasonable for building in spite of the different levels of the site. The provision of terraces for all beds has not been fully solved, but it would appear that with a slight reconsideration of the east and west wings, this defect would be overcome. The adoption of the double corridor on the ground floor, to provide the necessary bed terrace over, has the advantage of giving quietness to the single wards. It might, however, be advisable to consider whether the replanning of the "service rooms" with a single corridor and lighting bays, would not give a more advantageous arrangement, as it would provide cross-ventilation and better lighting. Whilst this competitor, in common with the majority of the other schemes, has not made special provision of separate approaches for male and female patients, the scheme as planned is easily adapted for this.

The siting of the theatre block is excellent, both in its relationship to the new hospital and its convenience for use by patients from the other existing units on the site. The arrangement of all these rooms as a single unit, and all on the ground floor, is a very satisfactory arrangement, enabling the unit to be administered with the minimum of staff, and simple for the control of the patients. The boiler-house block is well placed and satisfactorily laid out, but the laundry would appear to be on rather a generous scale.

The elevations of all the buildings are simple, effective, economical in design and upkeep, and are of distinct architectural merit. They should provide a pleasant group of buildings, and the hospital block particularly has the advantage that it is not "institutional" in character, but is a building of pleasing design and interesting grouping.

The competitor's estimate of cost is given as £132,000, and, whilst this figure is higher than those given by other competitors, actually, the scheme as planned when considered on the same costs basis with the other schemes, is one of the three most economical submitted, and on the information available I consider this scheme could be carried out within this figure if the internal finish and fittings are carried out with reasonable economy.

The scheme, whilst requiring a certain amount of further consideration in several details, is undoubtedly a very sound one, and is capable of being developed into a highly satisfactory solution of the requirements set forth in the conditions for the competition, and a building which meets very satisfactorily the modern requirement of a more centralised layout in contrast to the scattered layout of the pavilion system.

"MATERIALS AND CONSTRUCTION IN THE LIGHT OF MODERN RESEARCH"

[ANSWERS TO QUESTIONS.]

By B. PRICE DAVIES, F.S.I., M.T.P.I., L.R.I.B.A.

IN introducing this series of articles which appeared in *The Builder* for the first half of this year, queries and criticisms were invited. Many have been received, and an endeavour is being made to answer them.

Firstly, it should be mentioned that the writer is in no way connected with the Building Research Station, nor has he the means of carrying out laboratory experiments. His appreciation of the research work of recent years is that of one whose daily practical work is indebted to the findings of research for light on many abstruse problems.

A reader sent in a photograph to prove the statement made in the articles that the death watch beetle will pierce through lead. He was kind enough to send a special printed article of his own authorship on this subject. The photograph shows several holes in 8-lb. sheet lead, and also the unsuccessful attempts of the beetle. His article states the view that all available experience goes to prove that a well-laid copper roof will give a complete guarantee against the attack of the death watch beetle. He suggests that reference to No. 10 gauge sheet zinc is a misprint. This is not the case, and verification of this has been obtained. The No. 10 gauge used was that for V.M. sheet zinc, and compares with No. 25 wire gauge. The weight of a sheet 8 ft. x 3 ft. is stated to approximate 17 lb. These two gauges vary in the principle of gradation. The greater the gauge number of the former, the *heavier* the weight of sheet; with wire gauge, however, the greater the number, the *less* the weight. This reader states further that he is not quite sure that the use of zinc and copper in close contact is as detrimental as is usually supposed. He has in mind an example of such contact in London, and after about twenty-four years he is informed that the roofs were perfectly good, and that no trouble has been experienced.

With reference to the weather-proofing of damp walls, a firm which produces a colourless liquid for external application for this purpose, has sent to state that their solution can be relied upon. The writer has not had experience with this particular solution, but his experience with some others of the kind has been disappointing, and makers can always suggest that the solution was not properly applied!

A very interesting letter came to hand with regard to the timber known as "Greenheart." The reader's opinion does not altogether coincide with the authority consulted by the writer, but greenheart is not an Australian timber as stated in the articles; the writer is grateful for the correction. The reader states: "I believe that I am correct in stating that the true greenheart (Ocotea Rodioei Mez, Nectandra Rodioei Schomb) is obtainable only from British Guiana, the chief sources of supply being along the banks of the Essequibo, Demerara and Berbice rivers." The book consulted by the writer states that greenheart is the principal timber shipped from British Guiana, and refers to it as the only true Nectandra Rodioei, but in another part of the book it is stated that greenheart is also obtained from Dutch Guiana. As these two countries adjoin each other, and are on the same latitude, one would not expect much difference in the qualities of the greenheart of the two districts. East African greenheart is referred to in the same volume and termed "Warburgis Ugandensis."

Other letters have been received which have necessitated direct and immediate correspondence. In one case an opinion was asked as to the weather-proof qualities of a wooden sash window with certain originalities of design. With wooden windows in general, it should be borne in mind that timber expands and contracts according to climatic conditions, and that hung sashes can twist. These points are of much importance from the standpoint of weather resistance. Another point to remember is that a throating on a head or sill is not going to prevent the wind driving the water over the groove.

There now only remains a concluding note of thanks to correspondents who have patiently awaited their replies from the writer.

NEW PUBLIC WORKS

Andover.

Tenders are invited by T.C. for the erection of municipal offices, museum, public conveniences and caretaker's accommodation in Bridge-street, on the site adjoining the Free Library. Particulars from Mr. F. Henshaw, L.R.I.B.A., Westminster Bank-chambers. Deposit £1 1s. Tenders by September 22.

Hertfordshire.

Tenders are invited by the C.C. for the erection of a new County Council school to accommodate 634 scholars on the Osidge Estate, Clare Side, East Barnet Valley. Particulars from County Surveyor, Hatfield. Deposit £2 2s. Tenders by October 3.

Kettering.

U.D.C. invite tenders for the erection of (1) 36 houses on the Brook-street site, and (2) conveniences in the Rockingham-road pleasure ground. Particulars from the Engineer and Surveyor, 3, Gold-street, Kettering. Deposit £2 2s. each contract. Tenders by September 17.

Leighton Buzzard.

Tenders are invited by the U.D.C. for the erection of 24 houses on various sites. Particulars from the Council's Surveyor, Mr. B. A. Robjaub, Council Offices. Deposit, £2 2s. Tenders by September 20.

Manchester.

The T.C. invite tenders for the erection of two blocks of shops at Sale-road Circle (South Side) on the Wythenshawe Estate. Applications to City Architect, Town Hall. Deposit £1. Tenders by September 18.

Scotswood.

Representatives of the Durham County Council, the Tyne Improvement Commission, the Newcastle City Council, and the Ministry of Transport have drawn up a provisional scheme for the erection of a bridge over the Tyne at Scotswood to replace the Scotswood Bridge, which is considered inadequate for present needs. This would cost about £600,000.

Staffordshire.

Tenders invited by C.C. for alterations and additions to the Grammar School, Rugeley. Applications to Mr. F. A. Hughes, Director of Education, Stafford, by September 22. Deposit £5 5s.

Torquay.

Plans have been prepared for a new Borough Library at Torquay at an estimated cost of £27,000.

York.

Tenders are invited by T.C. for demolition of prison buildings on the York Castle site. Particulars from Mr. F. W. Spurr, City Engineer, Guildhall. Tenders by October 15.

Town Planning.

Major Harry Barnes, the chairman of the Town Planning Committee of the London County Council, is visiting Paris, Berlin, Vienna, and Rome during this month to acquaint himself on the spot with the latest town planning operations in these cities.

PLANNING FOR LIFTS

By GEO. W. GREY, F.R.I.B.A., F.S.I.

LIFTS become an increasingly important factor in building. The grand staircase becomes less "grand," and the lift emerges from some obscure corner, where it was placed in earlier days. With buildings having a good lift service, staircases become only an emergency means of reaching a different level.

Better service is generally obtainable with a number of comparatively small-capacity lifts than a single lift or a few of large capacity. With only a single lift, the consequences of a breakdown are serious. With two or more lifts, the less the inconvenience. A number of small lifts also permits of organisation to suit varying traffic requirements.

All lifts may need to run at full capacity in an office block at the time staffs are coming in the morning, going and returning for meals, and at the end of the day, while less than the full number may give an efficient service between these times, and one only may suffice after the normal office hours. A number of lifts will ensure economical and quick running by serving certain floors only during the rush hours. This will make possible "full up" unbroken runs, and will avoid the aggravation of long waits, with the constant passing of intermediate floors.

An exception to this arrangement may be necessary in stores and hospitals. Hospital lifts may be required to be sufficiently big to take a patient in a stretcher, with nurses in attendance. With stores, one staff or goods lift, of large capacity, is useful for moving showcases, etc., from floor to floor, and can be useful for dealing with the heavy staff traffic at closing time, and service up to staff dining-rooms at meal times. At least one store has a "Jumbo" lift, taking up to all floors a loaded motor vehicle. For hotels, assignments of lifts for particular purposes can be economically varied at different parts of the day.

Batteries.

The grouping of lifts has several advantages. The "battery" can be in charge of a "starter," who can marshal passengers to the next up-going lift, and keep the lift attendants up to their work. With grouped lifts, when a lift is not working, notices to take another distant lift are avoided. The crush space, as a whole, can be less for a battery than for a number of distributed lifts.

A good position for a battery of lifts to large buildings is in the centre. It is equidistant from different entrances and central to offices and rooms above, and it then occupies the space most difficult to light, leaving outer walls for other purposes where good natural lighting has a greater value. In the case of stores, the customer, in passing to "batteries" of lifts in the centre, sees the display of goods on the ground floor; with hotels, the "battery" can be behind the reception office.

Cages and Wells.

Cages wide in proportion to their depth, with doors opening full width of cage, facilitate quick loading and unloading. Closed-in wells are an advantage, for, in the event of fire, they tend to stop the spread of fire and smoke from floor to floor, and may enable occupiers to be brought in safety from the floor above the fire to the street; and the fact that passengers will be unable to obtain a view of smoke and flame will tend to prevent panic.

Approaches.

Lifts should be arranged so that the attendant can see approaching passengers without leaving the starting handle. Mirrors giving the attendant a view down approaches can sometimes be arranged. These, obviously, lessen the number of trips. With a large battery of lifts, however, continually running, the mirror device loses much of its value.

BOOK REVIEWS

A History of Everyday Things in England. Part III. The Rise in Industrialism, 1733-1851. By MARJORIE and C. H. B. QUENNELL. London: B. T. Batsford, Ltd. Price 8s. 6d. net.

The authors have now a long list of books to their credit, and this is the last volume but one in that history of England which they are constructing from the study of its daily life. Theire is indeed a fascinating task, and the cumulative effect of text and illustrations gives an entrancing picture of the changes in our civilisation. It is possible in these stern days of political economy that this volume may prove to be the most important one of the series, as there is nothing comparable in English history to the changes produced by the industrial revolution. From that point of view this book comes at an opportune moment when so many references are being made to the causes and effects of the industrial movement.

The authors have much to say that is interesting and instructive about the art of building, which forms one of the three great fundamental trades—farming, clothing and building. In this volume we see the village and the factory; the horse and the railroad · agriculture and industry: machinery and handicrafts—and we see the changes in all these things. To trace the details of these changes in architecture, costume, farming, and many other trades, has been a task which the authors have invested with a great deal of charm. In a particular sense they have rendered a distinct service to architecture by giving it its true place and significance in its development in English history.

Explanatory Handbook on the Code of Practice for Reinforced Concrete. By W. L. SCOTT, M.Inst.C.E., and W. H. GLANVILLE, D.Sc., Ph.D., A.M.Inst.C.E., M.I.Struct.E. Concrete Publications, Ltd. Price 8s.

When the "Code of Practice" has been embodied in the by-laws and regulations of the local and other authorities it will be of the utmost importance to all architects, engineers and contractors. This book should then be of great use in that it explains the principles of the Code, interprets to the user what may constitute points of difficulty, and extends and amplifies it for practical use, as mentioned by Sir George Humphreys in the foreword which he has contributed to this work.

The book does not set out to show the application of the Code to the details of reinforced concrete design, neither does it, except in the case of columns, give an indication of the effect upon the size and proportions of structural members. The authors, who served on the committee which prepared this important document, have rather set out to give the reasons, discovered both in the laboratory and on the works, for the various requirements which should accompany the use of higher stresses in reinforced concrete design, and to simplify the various clauses which have fortunately been kept as general and as concise as possible. The Code has been entirely reproduced and is indicated by lines in the left-hand margin, whilst the author's comments follow the various clauses.

In dealing with the sections governing design, the authors have indicated the effects of the alternate methods which the Code permits, and have also given a number of useful tables, including bending moment factors for continuous beams and for slabs spanning in two directions, and permissible loads on columns of various sizes, concrete mixtures and percentages of reinforcement. The amplifications of the rules for flat slabs should also prove useful. The chapters devoted to materials and workmanship contain a good deal of information with which only the experts appear to have been familiar in the past, but which should be known to all interested in reinforced concrete.

One cannot read this book without being convinced that the factor of safety of reinforced concrete structures designed and erected in accordance with the Code will be at least as high as that in general use with other materials.

The Workmen's Compensation Acts, 1925 to 1931, with Notes, Rules, Orders, Regulations and Schemes. By W. ADDINGTON WILLIS, C.B.E., LL.B., Barrister-at-Law. Being the twenty-ninth edition of "Willis's Workmen's Compensation Acts." London: Butterworth & Co., Shaw & Sons. Price 17s. 6d. net.

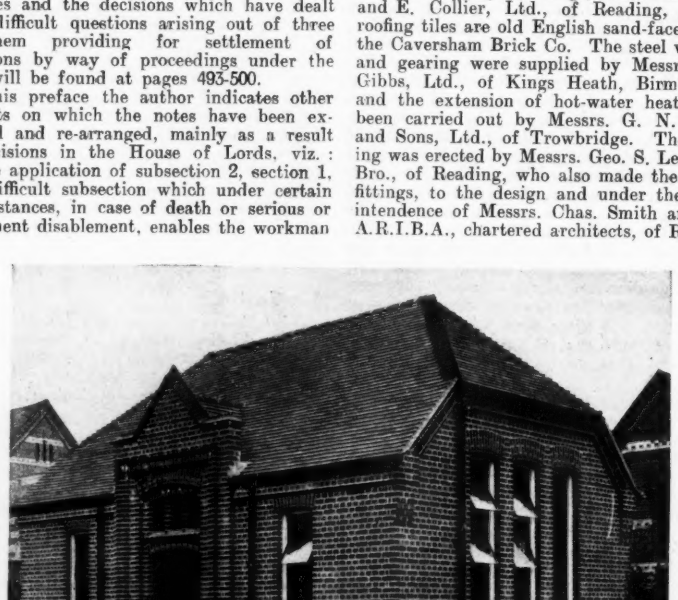
Mr. Willis's work on the Workmen's Compensation Acts has long attained the position of a standard, if not the standard, work on the subject, and it requires little notice at the hands of the reviewer, who can but note the new features which mark each edition. The preceding edition appeared in May, 1932, very shortly after the Act of 1931 came into operation, amending section 9, subsection (4) of the principal Act, which dealt with the right of partially disabled workmen under certain circumstances to claim compensation as for total incapacity, and that Act and the inclusion of the Rules and Orders relating to silicosis and asbestosis, as regards schemes operated by committees, formed the new features of that edition. In this twenty-ninth edition this latter subject is carried further, and in our opinion a great improvement has been effected. There are in operation five such schemes, and as they contain many paragraphs common to more than one scheme, in the former edition cross references were resorted to, but the author states that this treatment having proved inconvenient, the schemes are now set out in full. These schemes and the decisions which have dealt with difficult questions arising out of three of them providing for settlement of questions by way of proceedings under the Act, will be found at pages 493-500.

In his preface the author indicates other subjects on which the notes have been expanded and re-arranged, mainly as a result of decisions in the House of Lords, viz.: (1) the application of subsection 2, section 1, that difficult subsection which under certain circumstances, in case of death or serious or permanent disablement, enables the workman (or his dependants) to recover compensation although he has acted in contravention of regulations or orders (page 60); (2) the grounds of relief on failure to give proper notices of accident, etc. (page 341); and (3) the susceptibility to recurrence of disease (page 472). The number of tables of the prices of Immediate Life Annuities has also been increased.

Since this work was published there has been an important decision of the Court of Appeal on this latter question in Timmins *v.* Brodsworth Main Colliery (*The Times*, June 9), and also two decisions in the House of Lords on the Act of 1931. It is impossible to glance at this work without seeing that the case law on this subject has assumed unwieldy proportions. The author has done valuable service in summarising the law on certain sections, and we hope he may be able to extend this system, and possibly in the process be able to eliminate some of the decisions, but we make any suggestions with great hesitation, as this work has proved its value from the earliest inception of Workmen's Compensation.

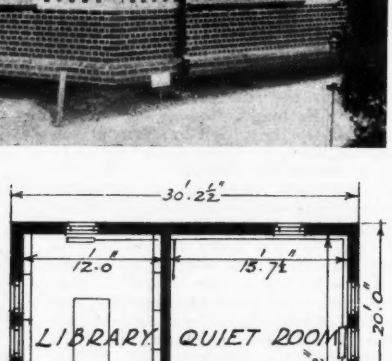
NEW SCIENCE LIBRARY, READING SCHOOL.

THIS new building, which has been erected in memory of the late Dr. Joseph Wells, consists of a library and reading-room. It is faced with multi-coloured, hand-made facing bricks, with special hand-made moulded bricks and grey dressings, from Messrs. S. and E. Collier, Ltd., of Reading, and the roofing tiles are old English sand-faced, from the Caversham Brick Co. The steel windows and gearing were supplied by Messrs. John Gibbs, Ltd., of Kings Heath, Birmingham, and the extension of hot-water heating has been carried out by Messrs. G. N. Haden and Sons, Ltd., of Trowbridge. The building was erected by Messrs. Geo. S. Lewis and Bro., of Reading, who also made the library fittings, to the design and under the superintendence of Messrs. Chas. Smith and Son, A.R.I.B.A., chartered architects, of Reading.



MEMORIAL SCIENCE LIBRARY, READING SCHOOL.

MESSRS. CHARLES SMITH & SON, A.R.I.B.A., Architects.



LAW REPORT

KING'S BENCH DIVISION.
Before MR. JUSTICE SWIFT.

CASE UNDER THE HOUSING ACTS OF 1925 AND 1930, AND MINISTER OF HEALTH'S DUTIES.

In the Matter of the Jarrow North Ward Clearance Order (No. 1).

In this case, Alice Errington and Elizabeth Steel, of Jarrow, and Catherine Anne Maxwell, of Kinton-road, Gosforth, as the executors of the will of the late Mr. Robert Smith, asked that an order of the Minister of Health should be quashed.

Mr. G. Blanco White, for the applicants, said that the dispute concerned some houses standing on about 1¾ acres on a number of blocks which had become subject to the clearance order. The area had been declared to be an unhealthy area and the owners then, as the place was under suspicion, had not, perhaps, done as many repairs as they could or might have done, and in 1933, no doubt, many of the houses required attention. On the other hand, the streets were wide and the rooms high, so that the houses were not so bad as they were made out to be. In 1933 the Medical Officer of Health represented to his Town Council that a number of the houses, by reason of disrepair and sanitary defects, were unfit for human habitation, while others were dangerous and injurious to the health of the occupants and the inhabitants generally. He suggested that the best way of dealing with the matter was by demolition. In February, 1933, the Council made an order, and notice was served on the owners in April, 1933. They at once put in an objection, and a public inquiry was subsequently held. There was no doubt a serious question whether the order should be confirmed. Two witnesses were called for the Council, one of whom was a Dr. Dormer. His evidence came to this, that although he would like the area demolished, it would be possible, except as to certain houses, which were congested, to make the others sound by repair and improvements. In the end the Minister confirmed the clearance order covering the buildings contained in the Schedule, and being in Shakespeare, Spenser, Chaucer and Milton Streets. The applicants now asked that the order should be quashed. They contended that the Minister did not act in a proper manner in that he permitted a deputation to come before him from the Town Council, held other communications with the Council behind the backs of the applicants, to which they had no opportunity of replying. They further contended that the requirements of the Housing Act, 1930, had not been complied with, with the result that the applicants had been substantially prejudiced. After further inquiry there was a meeting in September, 1933, and the Inspector appointed by the Minister suggested that the property owners should agree about the repairs and improvements required in some of the houses. The Council laid stress that the clearance order should prevail. Finally, certain improvements were approved by the Medical Officer, except as to certain cross blocks, which were condemned on the ground of congestion. On November 17, 1933, the mind of the Minister was that the order would not be confirmed with the exception of those houses the owners of which would not do the necessary repairs called for. But after that, communications took place between the Council and the Minister of Health which changed the latter's mind to confirm the order. The Council apparently pressed for demolition, and it was after that that what he (counsel) characterised as a grave impropriety took place, for somebody representing the Minister wrote informally to the Town Council, and that was replied to informally through the Town Clerk and arranging for a meeting, with the result that the officers of the Minister went to Jarrow and some houses were inspected without any notice being given to the owners. There were negotiations going on behind the backs of the owners and without giving them the opportunity of cross-examination. On March 27, 1934, the order was confirmed, which in the circumstances counsel submitted ought to be quashed, inasmuch as the Minister, in accordance with the provisions of the Act, had not fairly and properly considered the matter in a judicial manner.

The Solicitor-General (Sir Arthur Somervell, K.C.), on behalf of the Minister of Health, said, as he understood it, the gravamen of the charge made was that between the inquiry and the making of the order the Minister, by his representatives, met the Jarrow Council and discussed matters. It should not be forgotten that the Minister was not bound by the inquiry. The question of expense was one which had to do with the matter and one which the Minister must consider.

In reply to his lordship, Sir Arthur said the Inspector holding the inquiry could not hear evidence in private on behalf of any side. His duty was to report to the Minister on evidence given in public. The Minister had to consider the report of the Inspector, but, assuming he acted honestly, he could reject it. There was nothing to prevent him going to Jarrow to view the houses, and he need not tell the parties he was going. The question was: Had the Minister acted fairly? He (counsel) submitted he had, and that he was entitled to discuss the matter with the local authority.

His lordship: Do you contend that he could call in an independent surveyor?

Sir Arthur Somervell: In my submission he could. As long as the Minister acted fairly and honestly there was nothing to prevent him getting any information he thought necessary. It is inevitable and necessary for the Minister to consult with other persons in many matters connected with these orders, and it would really make it almost impossible for the Minister otherwise to carry on properly his duties in these matters.

His lordship, in giving judgment for the Minister and dismissing the application, held that the Minister in making the order had done so in full compliance with his duties under the Statute. It was said against him that he had been unfair, inasmuch as he had acted contrary to natural justice by listening privately to the stressing by the Council of their opinion that demolition was the only cure for the evil. As an Administrator the Minister's duty was to inform his mind in any way he liked, provided he did so honestly. It could not possibly be said here that he had not acted honestly. He (the Judge) thought the case went to the root of the Minister's authority, and in the circumstances he would do all he could to assist the parties to take the case to Appeal if so advised.

INQUIRY BUREAU

QUESTIONS.

Copper for Hot-water System.

SIR,—We shall be glad of any advice you can give us on the following:—On a contract where the water was found to be very soft, enough to make the use of lead pipes or iron quite impossible, a system of copper pipes, cylinders and tanks has been used. Unfortunately, it has been found in the hot-water system that a fair amount of copper has been dissolved in the water, and when soaps are used the water becomes a greenish tint. We are inclined to think the large storage tank is probably the main cause. Is there any reasonable and reliable method of coating the tank to do away with the action of the water on the metal? DOUBTER.

This inquiry has elicited the following reply from a technical correspondent, "A. M. G.":—"Very many of the compounds of copper possess a greenish colour. This is particularly noticeable when the compounds have been formed by the action on copper of such gases as will easily dissolve in water. That the water in question retains some compound of copper is shown by the analysis of the tap water. Because of the action of alkalis, etc., contained in ordinary washing soap the colouring effect will show up much more. For ordinary domestic purposes, with the exception of drinking and cooking, there should be no objection to the use of such water.

"As the water has less than 7 degrees of hardness it comes within the category of soft waters and therefore most plumbers recommend the use of copper for pipes, etc. As an alternative good tin-lined pipes could have been used, or as one well-known plumber suggests:—'The use of aluminium should not be overlooked since it is becoming more and more common because of its many advantages over other metals.' The hot water cylinder, rather than the storage tank, is more likely to be the origin of the greenish coloration. This being so, unless it is thought advisable to go to the trouble and expense of endeavouring to replace it by an aluminium one—or a more expensive tin-lined one—the copper cylinder accompanied by the greenish colour must remain.

"With respect to the storage tank it is suggested that it should be thoroughly dried out and given a substantial coating of hot slaked lime or even good cement wash, and then allowed to well dry again before refilling with water. This would remove the origin of coloration from the tank, but, naturally, it would not be permanent."

Building Society Survey: Alleged Negligence.

SIR,—I would like to have your advice on the following:—I purchased a house last October through a well-known London building society. I relied, of course, on the report of the building society's surveyor. He passed the house in question, and in his report stated that the house, apart from one or two quite trivial points, was sound. A few weeks later cracks appeared in the front wall of the house and in the friezes and inside walls of the house. On closer inspection it was obvious that these cracks were extensions of old ones and had been carefully patched up when the house was sold. To an untrained eye they were invisible, but I hold that the surveyor was negligent in his survey and that he should have detected signs of patching and reported accordingly. I would like to know whether I have any grounds for claiming damages from the building society, or at least whether I can insist that they carry out the necessary repairs at their expense. R. S.

Foundation-Stone Laying.

SIR,—As a general foreman on a small country chapel, I shall be responsible for the arrangements in connection with the ceremony of laying two foundation-stones, and shall be glad if any of your readers who may be conversant with the procedure would pass any information on to me.

GENERAL FOREMAN.

ANSWERS.

Water Supply Mystery.

[ANSWER TO "E. J. S.," AUGUST 24.]

SIR,—The cause of the vibration is either insecure anchoring of the pipework or using pipework of insufficient cross section. All the pipework should be securely supported and the spaces between the supports should be unequal; this will help to damp out any vibration. Probably using larger pipework would provide a remedy, but would not usually be possible. A careful inspection of the system, turning on the various taps one by one, might show where the vibration originates, and probably what is the cause of the vibration. It is important that no length of pipework be left unsupported. If the capacity of the pipework could be increased by connecting a water container in the pipework so as to provide a reserve of water, and so bring down the water velocity in the pipework, it would undoubtedly help to solve the difficulty. W. E. W.

THE BUILDING TRADE

MORE ESSAYS ON BUILDING SUBJECTS—X.

By J. R. TAYLOR.

DETAILING FOR ECONOMY.—III. Window Sills.

The great increase in building costs in 1919-20 did a great deal towards bringing into wider use substitutes for natural materials, such as stone, which up to that time were freely used in the form of thresholds, sills and heads in even the cheaper types of cottage property. Natural stone used for such purposes was not always, or even widely, replaced by artificial or reconstructed stone, because for some considerable time the cost of this material remained comparatively high. Another thing that tended to discourage its use was that it was liable to crazing, a defect which, however, has been largely overcome by the Building Research Station. We now have available an artificial stone, equal, and in some respects superior, to the natural stone, and in the last three years there has been a marked improvement in its general quality. The point is that traditional detailing can again be brought into use with good effect, as, for instance, in the case of window sills. It is of first importance that a window sill used in a domestic building should give proper protection to the work below it, for this is one of the places at which trouble frequently arises through moisture penetration. If a sill be not so shaped as to throw off the water that flows down a window, the work below the sill must suffer. So much building goes on in which the dictates of prudence are ignored, that a repetition of the obvious is justified.

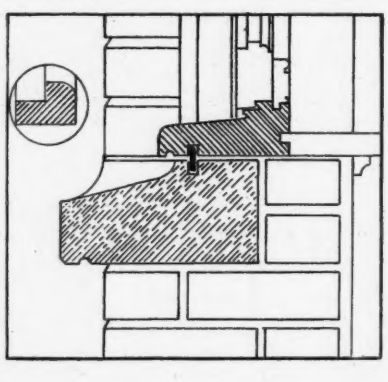
It has long been recognised that when wooden windows are made with either lifting sashes or casements, it is prudent, and consequently economical, if they be mainly constructed of soft wood, to give them a hardwood sill. If the opening is to have a stone sill, a metal tongue will be introduced, almost as a matter of course, to check the passage of rain through the joint between the wood and the stone. The metal tongue does not permanently, nor in some cases even temporarily, serve to exclude water from the joint, but checks its travel. Water does in almost every case find a lodgement under the wooden sill and cause decay. But the likelihood of water entering this joint can be much reduced by careful detailing. The accompanying diagram shows a typical stone sill which, with slight modifications, has been widely used. It takes a form that is, of course, well known, but it is reproduced for the purpose of illustrating these remarks. It will be noted that the weathering to the stone sill is carried well in under the wooden sill. This is done not for appearance but to provide for the temporary accommodation and prompt return of rain flowing over the wooden sill and held up for a second or so by wind.

In this detail there is nothing done solely for appearance, unless it be the moulding on the bottom rail of the sash and the beading of the ventilating fillet. With regard to the moulding of the sash, this is actually to-day a cheaper way of carrying out the work than by rounding off the arris as shown in the inset, and this is a point that is not without interest for those who prepare details. Formeriy, when sashes were made by hand, the mouldings were carried through and then cut back and mitred or scribed. To-day the mouldings are not cut back but the tenoning machine has a reverse pattern moulding iron which scribes out a housing to receive the moulded edge. With a rounded edge, as shown in the inset, the housing or scribing (as it is more or less indifferently called in some districts) would be feather-edged, and this would splinter. Consequently, rounded as compared with moulded sash bar requires an additional labour performed by hand, and is therefore more costly. Where sashes are divided into small squares the additional cost as compared with ovolo moulding will be considerable.

The small bedmould under the window-board is put there to preserve the edge of the plastering; the ventilating bead is to allow the bottom sash to be lifted a couple of inches and so permit air to enter between the meeting rails, and yet deny access to rain. The point that always strikes the writer in regard to old detailing is that for almost everything done there can be found an adequate constructional motive. The cheapest form of sill to window openings is undoubtedly the brick on edge, for no additional material is needed except perhaps a little cement. The numerous joints are, however, a source of weakness, particularly in domestic work, where the necessity for repointing is not realised until damage to the inside work has taken place. The sill formed with roofing tiles finds some favour with architects. This is curious, for the R.I.B.A. circular issued a warning against solidly bedding roofing tiles up gables and on party walls. For standard iron casements tile manufacturers are now supplying purpose-made tile sills, made up of material similar to that used for floor tiles. They make a very good and inexpensive sill, and can be safely bedded solidly in strong waterproofed cement mortar. At one time or another nearly every material used in building, from cast iron to glass, has been pressed into service for the purpose of forming window sills, and consequently we can notice a few only of them. When choosing a sill, the governing consideration should be whether for a very long time with practically no attention it will resist the penetration of wind-driven rain and the ill-effects of frost. Unless it does this it is unsuitable for domestic work, for nearly all house property suffers in varying degree from neglect.

Of late years rusticated bricks have found much favour for domestic work, particularly in mixed colours. One of the troubles they present is that they usually vary in length. But the builder's real trouble is that architects differ widely in respect to the width and thickness of specified joints. Some like a ¾ in., others a ½ in., and some an even thicker joint. In cavity work this does not present so much difficulty, but in solid work it is impossible to keep the bonding true, if the joints are to be thicker than the brick sizes will properly permit. To put it another way, a brick length should be twice the brick width, plus the thickness of joint. In practice, with multi-coloured rustics this is not always so, and the cost of labour in picking and choosing for both length and colour becomes heavy.

It is also noted that when rusticated bricks are used the arch in the real sense is often dispensed with, its place being taken by "soldiers" (bricks on end) laid on the heads of door and window frames, without either radiating joints or camber. In much of the cheaper forms of domestic work, the precaution of giving the so-called arch some additional support is not taken. In better-class work purpose-made bricks prepared to house a steel flat bar, or tee, are sometimes used, and, in addition, they are tied to concrete lintols formed behind them by casting in-situ. They then become more expensive than an arch proper, backed by a precast lintol.



In the Midlands and the North the stock or common brick is usually made a full 3 in. thick. If as a backing to facing bricks thinner commons have to be made, there will usually be no reduction in the price per 1,000, and, consequently, the cost of the brickwork is increased. To get over this difficulty, some architects specify a joint that will permit of four courses of common, rising to the same height as five courses of facing. The sixth course of facing is then carried through the full thickness of the wall. This is more economical, for usually with multi-coloured rustics there is a proportion of throwouts for defects of colour, which at a suitable price can be used for backing up in the sixth course, and be carried through internal walls for the preservation of the bond.

To cast concrete lintols in-situ is not usually economical. Enormous quantities of kerbs and channels formed of precast concrete are used in roadmaking, and manufacturers of these products will turn out lintols at a very low price. It is necessary, however, to order them well in advance so that they may be properly seasoned to stand a certain amount of rough usage. If they are to be plastered on some faces, this should be noted on the order, for after they have thoroughly hardened the formation of a proper key by hacking them takes up much time and is not always satisfactory. Pre-cast at the quarry or works, and instruction having been given that they are to offer a good key for plastering, this will usually be obtained by coating a face or faces of the mould with a retarding mixture that by delaying the set of cement on and near the surfaces in contact permits of its being brushed out to sufficient depth.

(To be continued.)

BRICKS

MANUFACTURERS AND THE SHORTAGE.

From inquiries that have reached us recently, it is clear that a shortage of bricks is still being felt in certain parts of the country. A good deal has been made of this shortage by the lay Press. *The Times* last week printed the opinion of a brickmaker to the effect that "the deficiency of bricks must continue for a long time, and possibly get worse." The article continues :—"The total possible output of the 1,600 brickfields of the country is 4,500,000,000 bricks a year. This is no more than is needed by the present phenomenal house-building activity, which is at the rate of about 6,000 houses a week—a record. Actually, all the brickfields are not yet in full working order. And what will be the position when the Government start to build 250,000 houses a year to replace the slums? This alone will require another 5,000,000,000 bricks."

The Present Position.

There is undoubtedly an unusually large demand for bricks in all parts of the country. Brick manufacturers are seeking ways to increase their production in order to cope with the demand, and in cases where their plant is capable of being speeded up they are working double shifts. The possibility of doing this, however, is the exception rather than the rule, so that the existing works must increase capital expenditure to meet the situation.

In certain directions, notably in the Fletton trade, new works are being built as rapidly as circumstances will allow. In other directions works are being modernised by the adoption of labour-saving plants long overdue. Taken as a whole, there has been no undue rush of capital eager to open up new works, and it is only the private individual with

money who can be induced to support new concerns. There have, however, been several combinations of existing works. While such activity as is projected may seem to presage a glut of bricks in a few years' time, the first effect of establishing new concerns or extensions will be to counter the greatly increased importation of foreign bricks.*

As regards allegations that manufacturers have taken advantage of the situation to increase prices, this is, as far as the large brick combines are concerned, untrue. Certain of the individual brickyards which manufacture special bricks have, it is possible, shown a tendency to raise their prices, but this is not general, and could not be so in view of the large importations of foreign—and especially Belgian—bricks, which are sold at a price which compels a competitive response from British brickmakers.

The industry, in fact, is taking all steps necessary to remedy the shortage.

PRIVATE STREET WORKS

APPEALS TO MINISTER.

In the current Report of the Ministry of Health two or three decisions of the Minister in connection with private street works are given which may be noted. One of the cases related to a street which had been laid out by the developer as one street, but which in the middle section was forked so as to encircle a large island site which was divided up into garden plots, each of these plots belonging to the house opposite which it lay. The straight sections of the street at each end of the island site were 42 feet wide with two footpaths, but on account of the absence of buildings on one side, the middle island section was laid out at half that width with a single footpath. The council had served notices on the frontagers to make up the street under section 150 of the Public Health Act, 1875, treating the whole street as one; and, on the notices not being complied with, had made up the street themselves and apportioned the cost on all the frontagers on the basis of one street. As each frontager on the centre section of the road was liable for the garden frontage to his house in the island, charged as a separate unit, the result of this was that the island frontagers were charged approximately twice as much as frontagers on the straight sections of the street.

Certain of the frontagers appealed to the Minister, who held that the result would have been more equitable if the street had been treated as three separate streets, and he allowed the appeal, and reduced the apportionment on the island section by 4s. 6d. per foot. The report states that this decision must be compared with a decision given a few years ago but not hitherto reported. There a street had been constructed as one street, but the width of one portion was 40 feet and of another portion 50 feet. The frontagers on the narrow portion contended that when the street was made up it should be treated as two streets, but the appeal to the Minister was dismissed on the ground that no evidence had been given showing that the frontagers on the wider section derived any special advantages as compared with those on the narrower portion. The two cases appear to show that to vary the apportionment by treating the street as one or more streets, some advantage or disadvantage must be shown to fall upon a section of the frontagers, which would render the apportionment as a single street inequitable.

Attention is called in the Report to a class of case which is now experienced owing to the practice of laying out cul-de-sac streets where the head is widened out into a small circle or square where vehicles may turn. In this type of development, particularly in the angles of a square, some of the premises fronting on the end of the street are wedge-shaped so that their frontages are narrow compared with their width at the back. The circumstances in which the council were acting in this case were somewhat unusual, as they were acting under section 150 of the Public Health Act, 1875, but supplemented by a local Act, which enabled them to have regard to the degree of benefit derived by the various premises, but subject to an appeal to the Minister, which may be exercised whether the authority have or have not taken into consideration the degree of benefit. The council had made the apportionment not on frontage, but on the basis of "unit" charge, regarding the benefit derived as generally equal for each property irrespective of the length of frontage. Certain of the frontagers with exceptionally short frontages appealed to the Minister, but the appeal was dismissed, the Minister stating that after careful consideration he had come to the conclusion that the method of apportionment adopted by the council was the fairest in their view.

It may be noted that the works here were being carried out under two statutes, which to some extent combined the provisions of section 150 of the Public Health Act and the Private Street Works Act, 1892, and although the apportionment proceeded on the degree of benefit, an appeal to the Minister was expressly reserved; but had the works been undertaken under the Private Street Works Act, it would appear from the decision in Rex *v.* Minister of Health, *ex parte* Aldridge (1925, 2 K.B. 363), that no appeal would have been possible to the Minister, as under section 7 (*f*) objection can be taken to an apportionment on this ground, and by section 8, subsection (1), the appeal lies to a court of summary jurisdiction, and subsection (2) provides no objection which can be made under that Act "shall be otherwise made or allowed in any court, proceeding or manner whatsoever." Under that Act it is discretionary whether the apportionment shall be made to the degree of benefit (see section 10), and the courts will not interfere with that discretion, but this decision of the Minister should be noted by local authorities.

Attention is called in the Report to an Order made March 20, 1934, reducing the rate of interest chargeable in connection with street works to 4 per cent., but the Order does not apply to any expenses which, in whole or in part, became recoverable before April 1, 1934.

NOVEL METHOD OF STEEL-FRAME CONSTRUCTION

The accompanying photograph, showing the steel framework of the new factory now under construction for the Betta Biscuit Company, Ltd., at Shadwell, is of considerable interest from the constructional point of view. It will be noted that some of the beams pass right through the columns, forming a cantilever to carry a suspended span composed of a shallower section. It is understood that this is the first steel-frame building to be erected in this country on this principle of construction. This method of design was adopted to give the maximum headroom possible at the suspended spans. It has also effected a certain economy in material.

The new building will be well over one million cubic feet in content and has five floors, each having a floor area of over 17,000 square feet. The automatic baking ovens, which, it is claimed, will be the largest biscuit-baking ovens in the world, will be housed on the fourth floor, which will have an area uninterrupted by stanchions or other vertical supports approximately 185 ft. long by 70 ft. broad.

Apart from the novel continuous cantilevered girder type of construction, interest is also to be found in the method of erection. The erecting crane which can be seen in the photograph passes along the side, and all structural members, including the roof, are erected at one lift.

The steelwork has been designed by the company's consulting engineer, Mr. Ewart S. Andrews, B.Sc., M.Inst.C.E., M.I.Struct.E., and is being carried out by Messrs. Matthew T. Shaw and Co., Ltd.

STEEL FRAMEWORK OF NOVEL DESIGN.

* The question of obtaining a guide to the production of building materials by the establishment of a Bureau of Building Statistics is discussed in a leading article on page 369.

NEW BUILDINGS IN LONDON

BARKING.—College.—September 11 is the sending in date for tenders for erection of a proposed technical college and engineering workshops in Longbridge-road for the Essex C.C. Mr. J. Stuart, County Hall, Chelmsford, is the County Architect.

BARNET.—Houses.—The R.D.C. is inviting tenders for the erection of 42 houses and 8 bungalows off Green Street-hill, Boreham Wood. Mr. A. J. Wilshire, Council Offices, Station-road, is the engineer and surveyor. The sending in date is September 15.

BARNSBURY.—Rebuilding.—Of the premises in Arundel-square, N., for the St. Giles' Christian Mission is proposed. The builders are Messrs. Mattock and Parsons, 165, Gray's Inn-road, W.C.1. The architect is Mr. H. Y. Boreham, 1, Museum-street, Bloomsbury, W.C.1.

CANNON-STREET.—Offices.—A corner site in Cannon-street and Laurence Pountney-hill, E.C.4, is being cleared by Messrs. Goodman-Price, Ltd., 181, Queen Victoria-street, E.C.4, preparatory to the erection of an office building. The contract has been placed with Messrs. E. D. Winn and Co., Ltd., 36, Wilton-place, S.W.1. The architect is Mr. Gervase Bailey, F.R.I.B.A., Kings-buildings, Smith-square, S.W.1.

CHINGFORD.—Shops.—Mr. L. T. Good, 316, Hoe-street, Walthamstow, E., proposes to build about four large blocks of shops with flats and offices above on the site in Albert-crescent and Cherrydown-avenue, Chingford Mount. The plans are being prepared by Mr. C. J. Brewin, L.R.I.B.A., 49b, The Drive, Walthamstow, E.

COULSDON. — Cottages. — The Mental Hospitals Committee of the Surrey C.C. are inviting tenders for the erection of four pairs of cottages, and extension of sewer work to existing drains, at Netherne Mental Hospital, Coulsdon. The architect is Mr. F. J. Hodgson, Lic.R.I.B.A., 201, High-street, Guildford. Tenders are to be returned to Mr. Dudley Aukland, clerk of the Mental Hospitals Committee, County Hall, Kingston-on-Thames, by September 27.

DAGENHAM.—School.—The Rev. Mother Superior, Ursuline Convent, Brentwood, has had plans passed by the U.D.C. for a school on south side of Connor-road, Dagenham.

EAST BARNET.—School.—The Hertfordshire E.C. are inviting tenders for the erection and completion of a new county council school, to accommodate 634 scholars on the Osidge Estate, Chase Side, East Barnet Valley. Mr. A. Ernest Prescott, County Surveyor and Architect, County Surveyor's Office, Hatfield, has prepared the plans.

EBURY BRIDGE.—Housing.—The Westminster City Council has recommended for acceptance the estimate of £77,801 submitted by Messrs. Humphreys, Ltd., Knightsbridge, S.W.7, for the first portion of the Ebury Bridge Housing Estate extension scheme. The scheme comprises 143 flats. Mr. A. J. Thomas, F.R.I.B.A., is the architect, and the quantities are by Messrs. Drower and Brighton, 28, Victoria-street, S.W.1. A list of tenders will be found on page 415.

FENCHURCH-STREET. — Improvements.—In connection with the improvements now being carried out at the station by the L. and N.E.R. Co., a new signal cabin is to be erected. This work has been entrusted to the hands of Mr. W. Morris Brand, 51, Old Hill-street, Stamford Hill, N.16.

FINCHLEY.—Flats and Garages.—Messrs. T. E. Wood and J. A. Thompson propose six flats and three garages at Brookland-rise, Falloden-way, Hampstead Garden Suburb. Plans are by Mr. H. H. Stewart, of Messrs. Burgess, Holden and Watson, architects, Beaconsfield, and not as stated in our last issue.

FINCHLEY.—Flats.—The Second Hampstead Tenants, Ltd., Temple Fortune House, Hampstead-way, N.W.11, propose to erect flats at Deansway, Hampstead Garden Suburb.

GOLDERS GREEN.—Flats.—Plans have been prepared for the development of the grounds of Melvin Hall, Highfield-road, N.W., by the building of a block of high-class flats. The architect is Mr. A. V. Pilichowski, 9, Great Russell-street, W.C.1. Messrs. J. L. Kier and Co., of 36, Victoria-street, S.W.1, have secured the building contract.

HOLBORN.—Alterations.—And additions are to be made to the Holborn telephone exchange for H.M.O.W. The contract has been entrusted to Messrs. H. and J. Taylor, Canada House, Hither Green-lane, Lewisham, S.E.

HOLLOWAY-ROAD. — Warehouse. — Messrs. H. Seymour Couchman and Sons, 520, High-road, Tottenham, are the architects for a new warehouse. The builders are Messrs. Holloway Bros. (London), Ltd., 157, Millbank, S.W.1, whose tender price is £13,545.

HOUNSLOW.—Building. — Amongst the plans passed by the T.C. are for flats in Heston-road, Messrs. Marshall and Tweedy, Cavendish-place, W.1, the architects; and 28 houses at Whitton Dene, for Mr. G. R. Townsend.

LOWER CLAPTON.—Flats and Shops—are to be built at Lower Clapton-road, to plans by Messrs. Marshall and Tweedy, Cavendish-place, W.1. Messrs. J. Trevor and Sons, of Coleman-street, E.C., are connected with the scheme. The site is being cleared by Messrs. W. and M. Hyman, Thornhill Bridge Wharf, Caledonian-road, N.1. Building contract not yet settled.

PORTMAN-SQUARE.—Flats.—A block of 116 flats is to be built on the site of Nos. 15-18. Messrs. John D. Wood and Co., Berkeley-square, W.1, are connected with the scheme.

QUEEN'S-SQUARE.—Flats.—Flats are to be built in Queen's-square. Messrs. Griggs and Son, Ltd., 100, Victoria-street, S.W.1, are the contractors, and the architects are Messrs. Marshall and Tweedy, FF.R.I.B.A., 4, Cavendish-place, Cavendish-square, W.1.

RICHMOND.—Showrooms.—And garages are to be built in Eton-street and Paradise-street. The builders are Messrs. Sisson and Co., Ltd., 1, The Green, Richmond. The architects are Messrs. Brewer, Smith and Brewer, 11, The Green.

SOUTHAMPTON-ROW.—Extensions.—To the Faraday House Training and Testing Institution covering the site of Nos. 48-51, Old Gloucester-street, at the rear, are about to be commenced. The contract has been let to Messrs. James Carmichael (Contractors), Ltd., 331, Trinity-road, Wandsworth, S.W. The plans are by Messrs. Douglas and J. B. Wood, 1, Old Burlington-street, W.1.

ST. PANCRAS.—Flats.—The Foundling Estates, Ltd., 11, Grenville-street, W.C.1, are to invite tenders for the development of the site of 42-52, Judd-street, N.W.1. About 104 flats, in one block, are proposed. The architects are Messrs. T. P. Bennett and Son, F.R.I.B.A., 41, Bedford-row, W.C.1.

STANMORE.—Flats.—About 30 in all are to be built on a portion of the South Lodge estate, off Edgware-road. The builder concerned is Mr. L. F. Richardson, 34, Mount Ephraim-road, Streatham, S.W. The architects are Messrs. Marshall and Tweedy, FF.R.I.B.A., 4, Cavendish-place, W.1.

STEPNEY.—Additions.—The B.C. has approved additions at St. Bernard's R.C. Central School, Baker-street, from plans prepared by Mr. John E. Sterrett, A.R.I.B.A., 27, Buckingham-gate, S.W.1. The work is now being carried out by Messrs. Robertson and Cameron, 16, Addington-square, Camberwell, S.E.5.

UPPER GLOUCESTER-PLACE. — Shops. — And flats are to be erected on a site in Upper Gloucester-place and Marylebone-road, N.W. The architects are Messrs. T. P. Bennett and Son, 41, Bedford-row, W.C.1, and the builders are Messrs. Gee, Walker & Slater, Ltd., 32, St. James's-street, S.W.1. The demolition work is by Messrs. Willment Bros., Baltic Wharf, Waterloo Bridge, S.E.1

UPTON PARK.—Stores.—The Commercial Structures, Ltd., 38/44, Canal-road, N.1, have secured the contract for a new branch of the British Home Stores, Ltd., at Green-street, E. The work, which will cost approximately £10,000, has just commenced. Mr. Albert L. Farman, A.R.I.B.A., of Abbey House, Baker-street, W.1, is the architect, and the quantities are by Mr. Cyril Sweett, 55, Gordon-square, W.C.1.

WALTON.—Additions.—Including alterations to existing buildings, are to be made to the Walton-on-Thames Cottage Hospital. The tender of Messrs. F. and H. F. Higgs, Ltd., Station Works, Hinton-road, Herne Hill, S.E., has been accepted. The cost will be about £4,000. The architect is Mr. Frank C. Ryde, F.R.I.B.A., 12, Little College-street, S.W.1.

TOWN AND COUNTRY PLANNING

The following list of local authorities and joint executive committees engaged in the preparation of planning schemes has been issued by the Town and Country Planning Department of the Ministry of Health, and shows the stage reached in each case at March 31, 1934 :—

Berks.—*Abingdon R.D.C. (Oxford T.C. Regional); Reading T.C. (Scheme A and Scheme B) (R.A.).

Buckingham.—Amersham R.D.C. (P.S.A.); *Newport Pagnell R.D.C. (Bletchley U.D.C. No. 1).

Cambridge.—Cambridge T.C. (No. 1) (S.O.); *Chesterton R.D.C. (Cambridge T.C. Nos. 1 and 2).

Chester.—†Alderley Edge U.D.C. (P.S.A.); Altrincham U.D.C. (Scheme A) (P.S.A.); Bebington U.D.C. (transferred from Neston U.D.C. (P.S.A.); †Bowden U.D.C. (P.S.A.); †Bucklow R.D.C. (Nos. 1, 2 and 3) (P.S.A.); †Cheadle and Gatley U.D.C. (P.S.A.); Chester T.C. (Nos. 1, 2 and 3) (P.S.A.); *Chester R.D.C. (Chester T.C. No. 1); *Chester R.D.C. (Ellesmere Port U.D.C. No. 1); *Compstall U.D.C. (Bredbury and Romily U.D.C. No. 1); Crewe T.C. (P.S.A.); Ellesmere Port U.D.C. (P.S.A.); †Handforth U.D.C. (P.S.A.); *Hoole U.D.C. (Chester T.C. No. 1); Hoylake U.D.C. (D.S.); †Lymm U.D.C. (P.S.A.); Neston U.D.C. (P.S.A.); Sale U.D.C. (P.S.A.); Sale U.D.C. (Ashton) (P.S.A.); *Tarvin R.D.C. (Chester T.C. No. 1); Wallasey T.C. (St. George's Mount Area) (S.O.), and (Nos. 3 and 4) (P.S.A.); †Wilmslow U.D.C. (P.S.A.).

Cornwall.—Newquay U.D.C. (No. 1) (P.S.A.); *St. Columb Major R.D.C. (Newquay U.D.C. No. 1); St. Ives T.C. (P.S.A.); *West Penwith R.D.C. (St. Ives T.C. No. 1).

Cumberland.—*Bootle R.D.C. (North Lonsdale Joint Committee); *Carlisle R.D.C. (Carlisle T.C.); †Penrith U.D.C.; †Penrith R.D.C.

Derby.—Alvaston and Boulton U.D.C. (P.S.A.), *(Derby T. C. No. 1); Belper *Belper R.D.C. (Derby T.C. No. 1); †Brampton and Walton U.D.C. (P.S.A.); Chesterfield T.C. (No. 1) (S.O.), (No. 1 amending) (S.O.), (No. 2 amending) (S.O.), †(Section 1) (P.S.A.); Chesterfield R.D.C. (P.S.A.); Derby T.C. (S.O.); Norton R.D.C. (D.S.); *Repton R.D.C. (Derby T.C. No. 1); *Shardlow R.D.C. (Derby T.C. No. 1).

Devon.—Exeter T.C. (Nos. 1, 2 and 3) (P.S.A.); *Newton Abbot U.D.C.; Newton

R.A.—Indicates that a resolution deciding to prepare a scheme, or authority to prepare a scheme, has become effective (whether or not passed, granted, or approved before the Act of 1932 came into operation), but that no preliminary statement or scheme has yet been submitted to the Minister.

P.S.—Indicates that a preliminary statement of proposals for development has been submitted but has not yet been approved by the Minister.

P.S.A.—Indicates that a preliminary statement has been approved by the Minister.

D.S.—Indicates that a draft scheme has been adopted but a scheme has not yet been submitted to the Minister.

S.S.—Indicates that a scheme has been submitted to, but has not been approved by, the Minister.

S.A.—Indicates that a scheme has been approved by the Minister and laid before Parliament.

S.C.—Indicates that a scheme has been laid before Parliament and is capable of coming into operation.

S.O.—Indicates that a scheme has become operative.

* Indicates that a portion of the authority's district is included in the area of a scheme being prepared by another authority, the name of which is shown in brackets.

† Indicates that, at the stage shown, the action has been taken by a joint executive committee or county council and not by the local authority itself.

Abbot R.D.C. (Torquay T.C. No. 2); Paignton U.D.C. (No. 1) (P.S.A.); Plympton St. Mary R.D.C. (Plymstock) (P.S.A.); *St. Thomas R.D.C. (Exeter T.C. No. 1), *(Exmouth U.D.C. No. 1); Torquay T.C. (Nos. 1, 2, 3 and 4) (P.S.A.); Totnes T.C. (P.S.A.); *Totnes R.D.C. (Torquay T.C. No. 2).

DURHAM.—†Billingham U.D.C. (S.O.); *Darlington R.D.C. (Darlington T.C. Nos. 1 and 2); *Easington R.D.C. (Hartlepools Joint Committee); †Hartlepool T.C. (P.S.A.); †Hartlepool R.D.C. (P.S.A.); †Jarrow T.C.; *Ryton U.D.C. (Newburn U.D.C. No. 1); †South Shields R.D.C.; Stanley U.D.C. (P.S.A.); †Stockton-on-Tees T.C. (S.O.); †Stockton-on-Tees R.D.C. (S.O.); Sunderland T.C. (Nos. 1 and 2) (S.O. and P.S.A.); *Tanfield U.D.C. (Stanley U.D.C. No. 1); †West Hartlepool T.C. (P.S.A.).

ESSEX.—Benfleet U.D.C. (South Benfleet) (P.S.A.), *Southend-on-Sea T.C., N.W. Scheme); †Brentwood U.D.C. (R.A.); †Burnham-on-Crouch U.D.C.; †Chelmsford T.C.; Chelmsford R.D.C. (No. 1) (S.O.), (No. 2) (P.S.A.), (No. 3) (P.S.A.); Chigwell U.D.C. (Loughton Scheme) (S.O.), and (transferred from Epping R.D.C.) (P.S.A.); Chingford U.D.C. (S.O.); †Clacton U.D.C.; Colchester T.C. (No. 1) (P.S.A.); Dagenham U.D.C. (P.S.A.); Epping R.D.C. (P.S.A.); Harwich T.C. (Nos. 1 and 2) (S.S.); Hornchurch U.D.C. (No. 1) (P.S.A.); Ilford T.C. (S.O.); *Lexden and Winstree R.D.C. (Colchester T.C. Nos. 1 and 2); Orsett R.D.C. (Sections 1, 2, 3 and 7) (P.S.A.); Purfleet U.D.C. (Nos. 1 and 2) (P.S.A.); Rayleigh U.D.C. (Rawreth) (S.O.), (Thundersley) (P.S.A.); *Rochford R.D.C. (Southend-on-Sea T.C., N.W. Scheme), *(Southend-on-Sea Eastern); Romford R.D.C. (P.S.A.); Southend-on-Sea T.C. (Chalkwell) (P.S.A.), North-Western (S.O.); †Tendring R.D.C., *(Colchester T.C. Nos. 1 and 2), *(Harwich T.C. Nos. 1 and 2); Tilbury U.D.C. (P.S.A.); *Wivenhoe U.D.C. (Colchester T.C. No. 1); Woodford U.D.C. (No. 1) (S.O.), (No. 2) (P.S.A.).

GLOUCESTER.—Bristol T.C. (No. 1) (P.S.A.); *Charlton Kings U.D.C. (Cheltenham T.C. No. 1); *Cheltenham R.D.C. (Cheltenham T.C. No. 1); *Chipping Sodbury R.D.C. (Bristol T.C. Nos. 1, 2 and 4); *Gloucester R.D.C. (Gloucester T.C. No. 1); *Kingswood U.D.C. (Bristol T.C. No. 2); *Mangotsfield U.D.C. (Bristol T.C. No. 2); *Northleach R.D.C. (Cheltenham T.C. No. 1); *Tewkesbury R.D.C. (Cheltenham T.C. No. 1); *Thornbury R.D.C. (Bristol T.C. Nos. 2 and 4); *Warmley U.D.C. (Bristol T.C. No. 2); *Winchcomb R.D.C. (Cheltenham T.C. No. 1).

HERTFORD. — *Barnet R.D.C. (Barnet U.D.C. No. 1); *Berkhamsted R.D.C. (Great Berkhamsted U.D.C No. 1 Scheme); Bishop's Stortford U.D.C. (D.S.); †Bushey (S.O.); *Hadham R.D.C. (Bishop's Stortford U.D.C. No. 1); Harpenden U.D.C. (D.S.); Hitchin U.D.C. (P.S.A.); *Rickmansworth U.D.C. (Ruislip-Northwood U.D.C. No. 2 Scheme) (P.S.A.); *St. Albans R.D.C. (St. Albans T.C. No. 1); †Watford R.D.C. (Joint Committee Area) (P.S.A.), *Ruislip-Northwood U.D.C. No. 1 Scheme).

KENT.—Beckenham U.D.C. (No. 1) (S.O.); Bexley U.D.C. (P.S.); Broadstairs and St. Peters U.D.C. (P.S.A.); Bromley T.C. (P.S.A.); Bromley R.D.C. (P.S.A.); Canterbury T.C. (Nos. 1 and 2) (P.S.A.); Chislehurst U.D.C. (S.S.); Dartford T.C. (S.O.); *Faversham R.D.C. (Blean R.D.C. No. 2); *Hollingbourn R.D.C. (Maidstone T.C. No. 1), *(Maidstone R.D.C. No. 1); *Isle of Thanet R.D.C. (Margate T.C. No. 1); *Lydd T.C. (New Romney T.C. No. 1); Maidstone T.C. (No. 1) (P.S.A.); *Maidstone R.D.C. (Maidstone T.C. No. 1); *Malling R.D.C. (Maidstone T.C. No. 1); Margate T.C. (S.O.); †Milton R.D.C.; Ramsgate T.C. (Nos. 1 and 2) (P.S.A.); Rochester T.C. (P.S.A.); Sevenoaks U.D.C. (D.S.); Sevenoaks R.D.C. (P.S.A.); Sidcup U.D.C. (S.S.); *Southborough U.D.C. (Tunbridge Wells T.C. No. 1); Tunbridge Wells T.C. (P.S.).

LANCASTER.—Blackpool T.C. (No. 1) (S.O.), (No. 3) (P.S.A.); Bootle T.C. (P.S.); *Chorley R.D.C. (Chorley T.C. No. 1); *Failsworth U.D.C. (Manchester T.C. "A"); Fleetwood T.C. (P.S.A.); *Fylde R.D.C. (Thornton Cleveleys U.D.C. No. 1), *(Blackpool T.C. No. 2), *(Kirkham U.D.C. No. 1); Great Crosby U.D.C. (No. 1) (S.O.), (Nos. 2 and 3) (P.S.A.); *Haydock U.D.C. (Newton-in-Makerfield U.D.C. No. 1); Huyton-with-Roby U.D.C. (P.S.A.); Kirkham U.D.C. (P.S.A.); *Lancaster R.D.C. (Lancaster T.C. No. 1); Liverpool T.C. (Nos. 1-4) (P.S.A.); *Lunesdale R.D.C. (Lancaster T.C. No. 1); Lytham St. Annes T.C. (P.S.A.); Middleton T.C. (South) (P.S.A.); Morecambe and Heysham T.C. (No. 1) (P.S.A.); Poulton-le-Fylde U.D.C. (P.S.A.); †Preston T.C. (S.O.); *Rainford U.D.C. (West Lancs R.D.C., Rainford); †Rishton U.D.C.; Rochdale T.C. (No. 1) (S.O.); Southport T.C. (No. 1) (P.S.A.); Stretford T.C. (No. 1) (P.S.A.); Thornton Cleveleys U.D.C. (D.S.); Urmston U.D.C. (P.S.A.), *(Stretford U.D.C. No. 1); Warrington R.D.C. (transferred from Bucklow R.D.C.) (P.S.A.), (transferred from Lymm U.D.C.) (P.S.A.); Waterloo-with-Seaforth U.D.C. (transferred from Great Crosby U.D.C.) (P.S.A.); West Lancashire R.D.C. (transferred from Sefton R.D.C. (P.S.A.), *(Formby U.D.C. No. 1), *Southport T.C. No. 1); *Whiston R.D.C. (Liverpool T.C. No. 2).

LEICESTER.—*Barrow-upon-Soar R.D.C. (Leicester T.C. No. 1); *Billesdon R.D.C. (Leicester T.C. No. 1); *Blaby R.D.C. (Leicester T.C. No. 1); Leicester T.C. (P.S.); Loughborough T.C. (P.S.A.); *Loughborough R.D.C. (Loughborough T.C. No. 1); *Oadby U.D.C. (Leicester T.C. No. 1); *Quorndon U.D.C. (Loughborough T.C. No. 1); *Shepshed U.D.C. (Loughborough T.C. No. 1); *Thurmaston U.D.C. (Leicester T.C. No. 1); *Wigston U.D.C. (Leicester T.C. No. 1).

LINCOLN (Parts of KESTEVEN).—*North Kesteven R.D.C. (Lincoln T.C. No. 1).

LINCOLN (Parts of LINDSEY).—Cleethorpes U.D.C. (D.S.); *Glanford Brigg R.D.C. (Grimsby R.D.C. No. 1), *(Scunthorpe and Frodingham U.D.C. No. 1); *Grimsby R.D.C. (Grimsby T.C. No. 1); Mablethorpe and Sutton U.D.C. (P.S.A.); *Roxby-cum-Risby U.D.C. (Scunthorpe and Frodingham U.D.C. No. 1); Scunthorpe and Frodingham U.D.C. (P.S.A.); Skegness U.D.C. (P.S.A.); *Welton R.D.C. (Lincoln T.C. No. 1).

LONDON.—London C.C.: †No. 1 (Wandsworth (S.O.); †No. 2 (Greenwich, Lewisham and Woolwich) (P.S.); †Nos. 3 and 4 (St. Pancras and Hampstead) (S.O.); †No. 5 (St. Pancras) (P.S.); †No. 7 (Battersea, Camberwell, Deptford, Greenwich, Lambeth, Lewisham and Wandsworth) (P.S.A.); †No. 8 (Greenwich and Woolwich) (P.S.A.); †No. 9 (Fulham) (D.S.); †No. 11 (Hackney, Islington and Stoke Newington) (P.S.); †No. 12 (Battersea, Camberwell, Greenwich, Lambeth, Lewisham and Wandsworth); †No. 13 (Hampstead, Islington, Paddington, St. Marylebone and St. Pancras).

NORFOLK.—Great Yarmouth T.C. (P.S.A.); Norwich T.C. (P.S.A.).

To be Continued

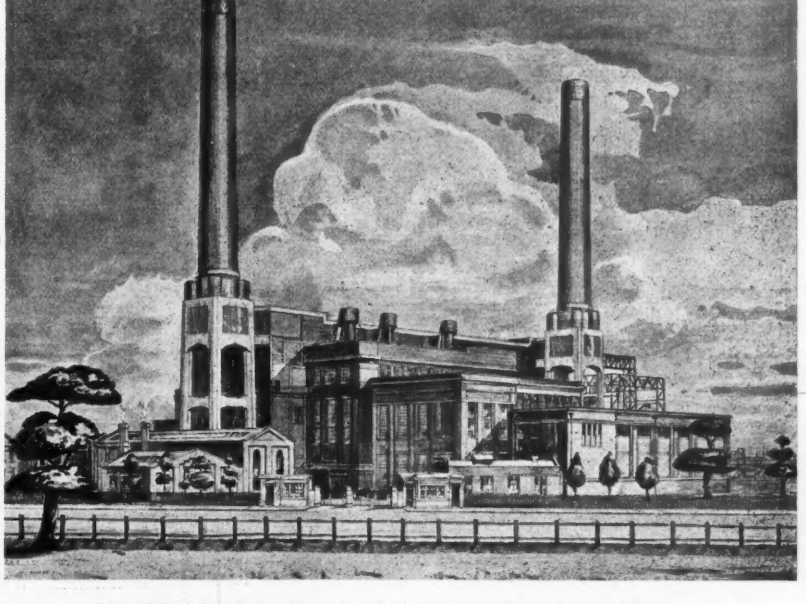
BARTON POWER STATION

The accompanying illustration shows the Barton Power Station as it will appear on the completion of two new chimneys and main flue, which are at present in hand. Each chimney rises to a height of 300 ft. above ground, and is to be 18 ft. 9 in. internal diameter at the top. The chimneys are of brick, with a reinforced concrete capping, and stand on massive reinforced concrete towers, with octagonal-section legs 6 ft. 6 in. across the flat. In the case of the chimney in the foreground, the tower legs straddle the works access roadway, and a railway siding with a turn-table also runs under the legs.

In the other tower the base is taken below ground, and an ash sump is formed within the foundation. The new main flue, which is of brick and concrete construction, is located on the top of the present buildings, and enters the chimney structures at the level where the rectangular serrated panels are indicated at the heads of the towers. The whole of the present thirteen steel chimneys are due for removal as part of the present scheme.

The contractors are as follows: Messrs. J. Gerrard and Sons, Ltd., Swinton, Manchester, reinforced concrete towers; W. Storrs, Sons and Co., Ltd., Stalybridge, main flue; The Chimney Construction Co., Ltd., Stourbridge, chimneys.

Messrs. C. S. Allott and Son, of Manchester, are the consulting engineers to the Manchester Corporation Electricity Department. Our illustration is given by permission of Mr. H. C. Lamb, M.I.E.E.



BARTON POWER STATION, FOR MANCHESTER CORPORATION.

MR. H. C. LAMB, M.I.E.E., Chief Engineer and Manager: MESSRS. C. S. ALLOTT & SON, Consulting Civil Engineers.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1934.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberdare	1/5	1/0½
Abergavenny	1/5	1/0½
Aberystwyth	1/2	10½
Accrington	1/5½	1/1½
Aldeburgh	1/1½	10½
Aldershot	1/2½	11
Alfreton	1/5½	1/1½
Alnwick	1/4½	1/0½
Altrincham	1/5½	1/1½
Amble	1/4½	1/0½
Amersham	1/3½	11½
Ammanford	1/5½	1/1½
Andover	1/2½	11
Arundel	1/2½	11
Ascot	1/3½	11½
Ashby-de-la-Zouch	1/4	1/-
Ashford (Kent)	1/2½	11
Ashford (Middx.)	1/4	1/-
Ashington	1/4½	1/0½
Ashtead	1/4	1/-
Ashton-under-Lyne	1/5½	1/1½
Aylesbury	1/2½	11
Aylsham	1/2	10½
Bagshot	1/2½	11
Banbury	1/3	11½
Barnsley	1/5½	1/1½
Barnstaple	1/3½	11½
Barrow-in-Furness	1/5½	1/1½
Barry	1/5½	1/1½
Basingstoke	1/3	11½
Bath	1/4½	1/0½
Batley	1/5½	1/1½
Beaconsfield	1/3½	11½
Beccles	1/2	10½
Bedford	1/4½	1/0½
Berkhamsted	1/3	11½
Berwick	1/4½	1/0½
Beverley	1/5½	1/1½
Bexhill	1/3	11½
Bideford	1/3½	11½
Biggleswade	1/3	11½
Billericay	1/2	10½
Birchington	1/3	11½
Birkenhead	1/7‡	1/2½
Birmingham	1/5½	1/1½
Bishop Auckland	1/5	1/0½
Bishops Stortford	1/3	11½
Blackburn	1/5½	1/1½
Blackpool	1/5½	1/1½
Blyth	1/5½	1/1½
Bognor Regis	1/3	11½
Bolton	1/5½	1/1½
Bournemouth	1/4	1/-
Bracknell	1/3	11½
Bradford	1/5½	1/1½
Bradford-on-Avon	1/2½*	11
Braintree	1/3½	11½
Brentwood	1/5	1/0½
Bridgwater	1/3	11½
Bridlington	1/5	1/0½
Brighouse	1/5½	1/1½
Brighton	1/4	1/-
Bristol	1/5½	1/1½
Broadstairs	1/3	11½
Bromsgrove	1/4½	1/0½
Bromyard	1/2	10½
Buckley	1/5½	1/1½
Bungay	1/1½	10½
Burnham-on-Crouch	1/2	10½
Burnley	1/5½	1/1½
Burslem	1/5½	1/1½
Burton-on-Trent	1/5½	1/1½
Bury	1/5½	1/1½
Bury St. Edmunds	1/2½	11
Buxton	1/5	1/0½
Byfleet	1/3	11½
Cambridge	1/5	1/0½
Canterbury	1/3	11½
Cardiff	1/5½	1/1½
Carlisle	1/5½	1/1½
Carnforth	1/5½	1/1½
Castleford	1/5½	1/1½
Caterham	1/4	1/-
Chard	1/2*	10½
Chatham	1/3½	11½
Chelmsford	1/4	1/-
Cheltenham	1/4	1/-
Chepstow	1/4½	1/0½
Chertsey	1/4	1/-
Chester	1/5½	1/1½
Chesterfield	1/5½	1/1½
Chichester	1/3	11½
Chorley	1/5½	1/1½
Cirencester	1/3*	11½
Clacton	1/3½	11½
Cleveleys	1/5½	1/1½
Clitheroe	1/5½	1/1½
Cobham	1/4	1/-
Colchester	1/4	1/-
Colwyn Bay	1/4½	1/0½
Congleton	1/5	1/0½
Coventry	1/5½	1/1½
Cranbrook	1/2	10½
Cranleigh	1/2½	11
Crawley	1/3	11½
Crewe	1/4½	1/0½
Cromer	1/2½	11
Crowborough	1/3	11½
Cuckfield	1/3	11½
Darlington	1/5½	1/1½
Darwen	1/5½	1/1½
Daventry	1/4	1/-
Deal	1/3	11½
Denbigh	1/4	1/-
Derby	1/5½	1/1½
Devizes	1/2*	10½
Dewsbury	1/5½	1/1½
Didcot	1/3½	11½
Diss	1/2	10½
Doncaster	1/5½	1/1½
Dorchester	1/2½*	11
Dorking	1/3	11½
Dover	1/3	11½
Dovercourt	1/3½	11½
Driffield	1/4	1/-
Droitwich	1/4½	1/0½
Dudley	1/5½	1/1½
Dunstable	1/2	10½
Durham	1/5½	1/1½
Eastbourne	1/4	1/-
E. Glam. (Mon. Val.)	1/5	1/0½
East Grinstead	1/3	11½
Edenbridge	1/3	11½
Ely	1/2	10½
Epping	1/4½	1/0½
Exeter	1/4½†	1/0½
Exmouth	1/3½	11½
Fakenham	1/2	10½
Falmouth	1/3½	11½
Fareham	1/3	11½
Faversham	1/2½	11
Felixstowe	1/4	1/-
Filey	1/4	1/-
Fleetwood	1/5½	1/1½
Flint	1/5	1/0½
Folkestone	1/3	11½
Frinton-on-Sea	1/3½	11½
Frome	1/2½*	11
Gainsborough	1/4½	1/0½
Gateshead	1/5½	1/1½
Gillingham	1/3½	11½
Glossop	1/5	1/1½
Gloucester	1/4½†	1/0½
Godalming	1/3½	11½
Goole	1/4½	1/0½
Gosport	1/4½	1/0½
Grantham	1/4	1/-
Gravesend	1/5	1/0½
Gt. Yarmouth	1/3	11½
Grimsby	1/5½	1/1½
Guildford	1/3½	11½
Guilsborough	1/4	1/-
Halifax	1/5½	1/1½
Hanley	1/5½	1/1½
Harpenden	1/3	11½
Harrogate	1/5½	1/1½
Hartlepools	1/5½	1/1½
Harwich	1/3½	11½
Haslemere	1/2½	11
Hastings	1/3	11½
Hatfield	1/4½	1/0½
Haywards Heath	1/3	11½
Hednesford	1/5	1/0½
Hemel Hempstead	1/4	1/0
Henley	1/3½	11½
Hereford	1/3½*	11½
Herne Bay	1/3	11½
Hertford	1/4½	1/0½
Heysham	1/5½	1/1½
Hitchin	1/3½	11½
Hoddesdon	1/4½	1/0½
Holt	1/1½	10½
Horley	1/3	11½
Horsham	1/2½	11
Horwich	1/5½	1/1½
Huddersfield	1/5½	1/1½
Hull	1/5½	1/1½
Hunstanton	1/2	10½
Huntington	1/2½	11
Ilfracombe	1/3½	11½
Ingatestone	1/3	11½
Ipswich	1/4½	1/0½
Isle of Thanet	1/3	11½
Isle of Wight	1/2	10½
Keighley	1/5½	1/1½
Kenilworth	1/5½	1/1½
Kettering	1/4½	1/0½
Kidderminster	1/4½	1/0½
King's Lynn	1/3	11½
Kirkham	1/5½	1/1½
Knowle	1/5	1/0½
Lancaster	1/5½	1/1½
Leamington	1/5	1/0½
Leatherhead	1/4	1/-
Leeds	1/5½	1/1½
Leicester	1/5½	1/1½
Leighton Buzzard	1/2	10½
Letchworth	1/3½	11½
Lewes	1/2	10½
Lichfield	1/4½	1/0½
Lincoln	1/5½	1/1½
Littlehampton	1/3	11½
Liverpool	1/7‡	1/2½
Llandudno	1/4½	1/0½
Llanelly	1/5½	1/1½
London—		
12 m. radius	1/7*	1/2½
12-15 m. radius	1/6½*	1/2
Long Eaton	1/5½	1/1½
Longton	1/5½	1/1½
Loughborough	1/5½	1/1½
Louth	1/4	1/-
Lowestoft	1/3	11½
Luton	1/4	1/-
Macclesfield	1/5	1/0½
Maidenhead	1/4	1/-
Maidstone	1/3½	11½
Malvern	1/4	1/-
Manchester	1/5½	1/1½
Manningtree	1/2	10½
Mansfield	1/5½	1/1½
March	1/2	10½
Margate	1/3	11½
Market Harborough	1/4½	1/0½
Matlock	1/4	1/-
Melton Constable	1/1½	10½
Melton Mowbray	1/4½	1/0½
Merthyr Tydfil	1/5	1/0½
Middlesbrough	1/5½	1/1½
Middleton	1/5½	1/1½
Middlewich	1/4½	1/0½
Milford Haven	1/3½	11½
Morecambe	1/5½	1/1½
Morley	1/5½	1/1½
Mundesley	1/2	10½
Nantwich	1/4½	1/0½
Newark	1/4½	1/0½
Newbury	1/2½	11
Newcastle-on-Tyne	1/5½	1/1½
Newcastle-u-Lyme	1/5½	1/1½
New Forest	1/2½	11
Newmarket	1/3	11½
Newport, Mon.	1/5½	1/1½
Newport Pagnell	1/2½	11
Northampton	1/5½	1/1½
Norwich	1/5	1/0½
Nottingham	1/5½	1/1½
Nuneaton	1/5½	1/1½
Oakham	1/4	1/-
Oldham	1/5½	1/1½
Ormskirk	1/5½	1/1½
Oxford	1/4½	1/0½
Oxted	1/2½	11
Paignton	1/4½	1-0½
Peterborough	1/4½	1/0½
Plymouth	1/5½†	1/1½
Pontypridd	1/5	1/0½
Portsmouth	1/4½	1/0½
Port Talbot	1/5½	1/1½
Preston	1/5½	1/1½
Pulborough	1/2	10½
Ramsgate	1/3	11½
Reading	1/4½	1/0½
Redcar	1/5½	1/1½
Redditch	1/4½	1/0½
Redhill	1/3½	11½
Reigate	1/3½	11½
Retford	1/4	1/-
Ripon	1/4	1/-
Rochdale	1/5½	1/1½
Rochester	1/3½	11½
Rugby	1/5½	1/1½
Saffron Walden	1/2	10½
St. Albans	1/5	1/0½
St. Helens	1/5½	1/1½
St. Neots	1/2½	11
Salisbury	1/2½*	11
Salisbury Plain	1/2½*	11
Sawbridgeworth	1/3½	11½
Saxmundham	1/1½	10½
Scarborough	1/5	1/0½
Selby	1/5½	1/1½
Sevenoaks	1/3½	11½
Sheerness	1/3	11½
Sheffield	1/5½	1/1½
Shipley	1/5½	1/1½
Shoeburyness	1/4½	1/0½
Shoreham	1/4	1/-
Shrewsbury	1/4½	1/0½
Sittingbourne	1/2½	11
Skegness	1/4½	1/0½
Sleaford	1/4	1/-
Slough	1/4½	1/0½
Southampton	1/4½	1/0½
Southend-on-Sea	1/4½	1/0½
Southport	1/5½	1/1½
South Shields	1/5½	1/1½
Spalding	1/3	11½
Stafford	1/5	1/0½
Staines	1/4	1/-
Stamford	1/4	1/-
Stevenage	1/3½	11½
Stockport	1/5½	1/1½
Stockton-on-Tees	1/5½	1/1½
Stoke-on-Trent	1/5½	1/1½
Stourbridge	1/5	1/0½
Stourport	1/4½	1/0½
Stowmarket	1/2	10½
Stratford-on-Avon	1/4	1/-
Stroud	1/3½†	11½
Sunderland	1/5½	1/1½
Sutton Coldfield	1/5½	1/1½
Swaffham	1/1½	10½
Swanage	1/3½*	11½
Swansea	1/5½	1/1½
Swindon	1/4*	1/-
Tamworth	1/5	1/0½
Taunton	1/3½	11½
Tenterden	1/2½	11
Tewkesbury	1/4*	1/-
Thetford	1/2	10½
Thorpe Bay	1/4½	1/0½
Todmorden	1/5½	1/1½
Tonbridge	1/3½	11½
Torquay	1/5	1/0½
Totnes	1/3½†	11½
Trowbridge	1/2½*	11
Truro	1/2½	11
Tunbridge Wells	1/3½	11½
Uppingham	1/4	1/-
Uttoxeter	1/3½	11½
Wakefield	1/5½	1/1½
Walsall	1/5½	1/1½
Walsden	1/5½	1/1½
Walton-on-Naze	1/3½	11½
Ware	1/4½	1/0½
Warminster	1/2½*	11
Warrington	1/5½	1/1½
Warwick	1/5	1/0½
Wellingborough	1/4½	1/0½
Wells (Norfolk)	1/1½	10½
Welwyn	1/3	11½
Welwyn Gar. City	1/5½	1/1½
West Bromwich	1/5½	1/1½
Westcliff-on-Sea	1/4½	1/0½
Weston-super-Mare	1/4½	1/0½
Weybridge	1/4	1/-
Weymouth	1/3*	11½
Whitby	1/4½	1/0½
Whitstable	1/3	11½
Widnes	1/5½	1/1½
Wigan	1/5½	1/1½
Wigton	1/4	1/-
Wellington	1/5	1/0½
Wilmslow	1/5½	1/1½
Winchester	1/3½	11½
Windermere	1/3½	11½
Windsor	1/4½	1/0½
Wisbech	1/2	10½
Witham	1/3½	11½
Woking	1/3½	11½
Wokingham	1/3½	11½
Wolverhampton	1/5½	1/1½
Woodbridge	1/2	10½
Worcester	1/4½	1/0½
Workington	1/4	1/-
Worksop	1/4	1/-
Worthing	1/3	11½
Wrexham	1/5	1/0½
Wroxham	1/2½	11
Wycombe	1/4	1/-
Wymondham	1/1½	10½
Yeovil	1/3*	11½
York	1/5½	1/1½

* Painters, 1d. less than other Craftsmen. † Painters, ½d. less than other Craftmen. ‡ Plasterers 1s. 8d.

For Building Trade Wages in Scotland, see page 412.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

SEPTEMBER 10.

Barking.—Erection.—Of electricity sub-station in Hertford-rd., for Corporation. R. A. Lay, B.E. and S.

Belfast.—Wiring.—And fittings for lighting, heating, bells, telephones, etc., at new buildings now in course of erection at Purdysburn Villa Colony, Saintfield-rd., for T.C. N. Fitzsimons, F.R.I.B.A., Friends' Provident Building, 58, Howard-st. Dep. £3 3s.

Bristol.—Abattoir.—At Gordon-rd., Whitehall, for T.C. H. M. Webb, City E. and S. Dep. £2 2s.

Bromley.—Redecoration.—And repairs to dwellings at housing estates, for T.C. Manager, Estate Office, Holbrook-way.

Castle Ward.—Painting.—Of 48 houses in Ferguson-cres., Hazlerigg, for R.D.C. James Jameson, sanitary surveyor, Fernlea, Ponteland.

Chesnire.—Erection.—Postmen's office at Moreton, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Daventry.—Houses.—25, at Byfield, and other works, for R.D.C. J. B. Williams, The Moot Hall. Dep. £1 1s.

Driffield.—Houses.—16 on three sites, for R.D.C. F. H. Margerrison, Building Surveyor.

Dundee.—Repainting.—Outside, at Duncarse Children's Home, for T.C. City Quantity S., 21, City-sq.

Eastbourne.—Re-covering.—Of highways motor-lorry depot roof in Churchdale-rd. with new slating, for T.C. B.E.

Gosport. — Foundations. — For new machinery and extension of compressing station and incidental works at Westfield-rd. depot, for T.C. A. Barlow, B.E. Dep. £2 2s.

Kirkcaldy.—Houses.—10, at Windygates, in various trades. Wm. Williamson & Hubbard, F.&A.R.I.B.A., Royal Bank-bldgs., Kirkcaldy. Dep. £1 1s.

London. — Repainting. — Gt. Eastern-st. railway bridge, for L.C.C. Chief Engineer (B.), County Hall, S.E.1. Dep. £1.

Moreton. — Postmen's Offices. — For H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Oswestry.—Houses.—On Llwyn Farm estate, for T.C. H. L. Fox, 18, Leg-st. Dep. £2 2s.

Plymouth.—Works.—For (1) male occupation centre; and (2) conversion of existing garden earth closets into W.C.s at Blackadon Mental Hospital; painting exterior of municipal buildings, etc., new staircase at Ford School, Devonport, painting in parks and recreation grounds and alterations to kitchen, Stonehouse Institution, for T.C. City Architect.

Pontefract.—Houses.—18, at Airdale, for R.D.C. Tennant & Smith, Ropergate.

Preston.—Interior Decoration.—Of fire station, Leyland-rd., Penwortham, for R.D.C. J. Gardner, clerk, Guildhall-st.

Rainford.—Painting.—Of 24 cottages, for U.D.C. S.

St. Helens.—Houses.—5 pairs and outbuildings for T.C. A. P. Statham, Borough and Water Engineer. Dep. £2.

Scarborough.—Aviary.—In Peasholm Park, for T.C. J. P. Watson, B.E.

Shanklin, I. of W.—Reconstruction.—Of public convenience, with diversion of 12 in. and 18 in. sewers, and sundry work, at Chine Bluff, for Sandown-Shanklin U.D.C. E.

Skipton.—Painting.—Of 52 houses on Short Bank-rd. housing estate, for U.D.C. E. and S.

Southborough.—Greenhouses.—At cemetery, for U.D.C. S.

Southend-on-Sea.—Cleaning.—And external painting houses; 61, at Eastwood-lane and 20, at Eastwood, lobbies and staircases to flats, Fairfax-drive, for C.B. Robt. H. Dyer, B.E. Dep. £1.

Southend-on-Sea.—Cleaning.—And external painting 113 houses at Sutton-rd. housing estate, for Corporation. Robt. H. Dyer, B.E. Dep. £1.

Stocksbridge.—Internal Decoration.—Of the town hall, for U.D.C. Douglas E. Robinson, surveyor, Town Hall, Stocksbridge.

Sunderland.—Houses.—186, at Ford Estate, for T.C. B.E. Dep. £2 2s.

Tadcaster. — Erection. — 40 houses and bungalows, for R.D.C. S. E. Carroll, engineer. Dep. £2 2s.

Thingoe.—Cottages.—Two at Brockley, for R.D.C. Hunt & Coates, architects, 51a, Abbeygate-st., Bury St. Edmund's.

Wells-next-the-Sea.—Painting.—External, of 50 houses on Northfield-av. and Gales-rd. housing estates, for U.D.C. W. A. Williamson, clerk, Council Offices, Wells, Norfolk. Dep. £1 1s.

Wirksworth.—Houses.—28, and other works in connection therewith at Gorsey Bank, for U.D.C. A. Eric Parry, architect and surveyor. Dep. £2 2s.

Wooley, nr. Hexham.—Painting.—Internal and external, at sanatorium, for Northumberland C.C. County Architect, 17, Claremont-place, Newcastle-upon-Tyne. Dep. £1 1s.

SEPTEMBER 11.

Barking.—Erection.—Of proposed technical college and engineering workshops in Longbridge-rd., for Essex C.C. J. Stuart, Chelmsford. Dep. £3 3s.

Chipping Norton.—Cottages.—Six pairs at Stonesfield, for R.D.C. T. Rayson, F.R.I.B.A., 47, Broad-st., Oxford.

Croydon.—Building.—2 urinal blocks and 10 w.c.s at Queen's-rd. Homes, for C.B. H. Berney, architect, 33, High-st. Dep. £2 2s.

Esher.—External Painting.—Of cottages in various districts, for U.D.C. S. Dep. 10s.

***Essex.**—Erection.—Of combined treatment centre at Thundersley, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

Kilbride.—Canteen.—And store at Kilbride Camp, County Wicklow, for Commissioners of Public Works. T. Cassedy, Secretary, Office of Public Works, Dublin.

Newton Abbot. — Convenience. — At Oakford, Kingsteignton, for R.D.C. W. J. Luxton, S., Westminster Bank-chambs., Courtenay-st. Dep. £1 1s.

Nottingham. — Assembly Hall. — At Claremont School, Claremont-rd., Hucknall-rd., for T.C. T. Wallis Gordon, City E. and S. Dep. £2.

Purfleet.—Houses.—Four, for aged people in Copper Beech-rd., South Ockendon, for U.D.C. C. S. H. Hawkes, Actng E. and S. Dep. £2 2s.

Rugby.—Houses.—Erection of 48, for T.C. B.S., Benn-bldgs., Rugby. Dep. £2 2s.

St. Pancras.—Erection.—Of Meter Dept. extension, for B.C. Electricity Dept., 57, Pratt-st. Dep. £2.

Southend-on-Sea.—Alterations.—And additions to municipal buildings, Clarence-rd. and Nelson-mews, for Corporation. Robt. H. Dyer, B.E. Dep. £2.

Wallasey.—Houses.—52, also flats and concrete roads, together with sewers, on Pasture-rd. housing site, for T.C. B.E. Dep. £2 2s.

Wellingborough.—Painting.—Internal and external, to 16 houses, Doddington-rd., Earls Barton, for R.D.C. H. G. Read, clerk, Council Offices, 18, Oxford-st.

SEPTEMBER 12.

Barrow-in-Furness.—Omnibus Depot.—At Hindpool-rd., for T.C. B.E.

Biggleswade.—Wiring.—Of 10 houses at Everton, for R.D.C. J. Owen Jones, S., 192, Drove-rd. Dep. £1 1s.

Birkenhead. — Alterations. — Painting and redecorating at 4, Cavendish-rd., for T.C. B. Robinson, B.E.

Glendale.—Houses.—6, at Wooler, for R.D.C. J. Wightman Douglas, 27, Bondgate Without, Alnwick.

Gravesend.—Houses.—201, on West Court Farm estate, for T.C. Borough Architect, 5, Woodville-terr. Dep. £2 2s.

Halifax.—Classrooms.—Dressing-rooms, at Ling Bob playing field, in various trades, for T.C. D. T. Lloyd Jones, B.E., Crossley-st. Dep. £1 1s.

Holbeach.—Police House.—At Saracen's Head, for Holland C.C. W. M. Smith, architect, County Hall, Boston.

Ipswich.—Installation.—Of heating and hot water supply at isolation hospital, for T.C. E. McLauchlan, Borough Surveyor and Water Engineer.

Newry.—Alterations.—And additions to Newry Infirmary and Newry fever hospital, and building and completing nurses' home, for B.G. Thomas Houston, chartered architect, 17, Wellington-pl., Belfast. Dep. £2 2s. each.

Omagh.—Hall.—At Lisnamallard. T. T. Hamilton, Town Surveyor.

Rawcliffe.—Decorations.—Internal, at institution, near Goole, for West Riding C.C. West Riding Architect, County Hall, Wakefield.

Reading.—Erection.—Block of Practical Instruction Rooms at Caversham Council School, Harley-rd., for E.C. W. R. Morris, 1 & 2, Market-place. Dep. £2 2s.

Royton.—Stonework.—Of shelter and conveniences at Edge-lane, for U.D.C. S. Dep. £2 2s.

South Shields.—Conversion.—Of 2,190 privy receptacles into water closets, for R.D.C. William Welsh, surveyor and architect, Council Offices, East Boldon. Dep. £2 2s.

West Calder.—Houses.—104 flatted, at Parkhead housing scheme, in various trades, for Midlothian C.C. County Architect, 10, Drumsheugh-gdns., Edinburgh, 3.

SEPTEMBER 13.

Bebington. — School.—New primary school at Stanton-rd., Bebington, for Chester C.C. F. Anstead Browne, F.R.I.B.A., County Architect, The Castle, Chester. Dep. £2 2s.

Brighton.—Reconstruction.—Of small convenience in Lewes-rd., near railway arch, for T.C. B.E and S. Dep. £2 2s.

***Kensington, W.**—External and Internal Painting.—At P.O. Savings Bank, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Kings Lynn.—Installation.—Of heating and hot-water service at post office, telephone exchange and garage, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Ormskirk.—Boiler House.—For central heating at Isolation Hospital, Green-lane, for U.D.C. S. Dep. £1.

Riccall.—Houses.—10, at Riccall, for R.D.C. Surveyor, H. Bell, Barlby-rd., Selby. Dep. £1 1s.

St. Austell.—Repairs.—And external painting at Poor Law Institution, for Cornwall C.C. S. Pool, A.R.I.B.A., County Architect, County Hall, Truro.

***Southampton.**—Extensions.—And alterations of senior boys' and girls' school, Hedge End, for C.C. A. L. Roberts, County Architect, The Castle, Winchester. Dep. £1 1s.

Stockport.—Conveniences.—At Edgeley-rd., for T.C. W. F. Gardner, B.S.

Wakefield.—Houses.—136, on various sites, for T.C. Percy Morris, architect.

SEPTEMBER 14.

Boston.—Extensions.—To premises of British Legion Club, South-sq. Ernest W. Impson, Hon. Secretary.

Cambridge.—House.—At Newmarket-rd., opposite Borough Cemetery, for T.C. G. W. Teasdale, B.S. Dep. £1 1s.

Hull.—Installation.—Of 1,276 lavatory basins on various housing estates, for T.C. D. Harvey, City Architect. Dep. £1 1s.

Leicester.—Installation.—Of heating and hot-water service at H.P.O., for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

***Loughborough.** — Erection. — Employment Exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Newport, Mon.—Painting.—At Newport high schools, Bolt-st. schools, and Shaftesbury-st. schools, for T.C. Borough Architect, Town Hall. Dep. £1 1s.

Norwich.—Erection.—Of 40 flats and 50 houses on sites at Cotton-gr., Mill Hill and Household House estates, for Corporation. Architectural Dept., City Engineer's Office. Dep. £2.

***Pallion, Sunderland.**—Erection.—Of Employment Exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Rye.—Houses.—35, on New-rd. housing site, for T.C. Arthur G. J. Cornner, B.S., 107, High-st. Dep. £2 2s.

Southampton.—Installation.—Of heating and hot-water service at Ordinance Survey Office, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

SEPTEMBER 15.

Barnet.—Houses.—42 and 8 bungalows off Green Street-hill, Boreham Wood, for R.D.C. A. J. Wilshire, E. and S., Council Offices, Station-rd. Dep. £2 2s.

Bristol.—Installation.—Of drainage system, etc., at Easton school, and additions at Wells-rd. school, for T.C. W. Ludford Freeman, Director of Education. Dep. £1 1s.

Crookhill.—Decoration.—And wall covering at receiving home, near Maltby, for West Riding C.C. West Riding Architect, County Hall, Wakefield.

Edinburgh.—Installation.—Of two heating boilers at City Chambers, for T.C. E. J. MacRae, F.R.I.B.A., City Architect.

Epsom.—External and Internal Decoration.—Of 51 houses on Hookfield housing estate, for U.D.C. Housing Manager, Town Hall, Epsom.

***Essex.**—Erection.—Of pair of police houses at East Horndon, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

***Essex.**—Erection.—Of two pairs police houses at Hockley, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

***Essex.**—Erection.—Of pair of police houses at Wickford, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

***Essex.**—Erection.—Of pair of police houses at Nevendon, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

***Essex.**—Erection.—Of three pairs of police houses at Rainham, for C.C. J. Stuart, County Architect, Chelmsford. Dep. £1 1s.

Heckmondwike. — Houses.—26 non-parlour type houses on the Hill Top estate, for U.D.C. F. W. Littlewood, surveyor, Council Offices, Heckmondwike. Dep. £1 1s.

Keighley.—Internal Painting.—To first-class swimming baths, for T.C. E. G. Felgate, A.R.I.B.A., Borough Architect. Dep. £1.

Kircudbright.—Houses.—36, at Minnigaff, Palnure and Creetown, for C.C. J. McBoyle, County Clerk, County Buildings.

Leeds.—Crematorium.—Chapel and office at Cottingley Hall Cemetery, for T.C. J. E. Acfield, City E. Dep. £3 3s.

Leeds.—Reinforced Concrete Rafts and Ducts.—For the extension of Kirkstall Generating Station, situated at Redcote-lane, Armley, Leeds, for T.C. C. Nelson Hefford, Manager of the Department, 1, Whitehall-rd., Leeds. Dep. £3 3s.

Lewes.—Entrance Gates.—And pay boxes at Stanley Turner recreation ground, Newhaven-rd., for T.C. C. T. Butler, B.S., Fisher-st. Dep. £2 2s.

Middlesbrough.—Heating.—And domestic water supply at the isolation cubicle block, West-lane Sanatorium, for C.B. S. E. Burgess, M.Inst.C.E., B.E. and S., Municipal Buildings, Middlesbrough.

Nantwich.—Open-air Swimming Pool.—At Salt Ley Meadow, for U.D.C. P. H. Paton, E., 25, Barker-st. Dep. £3 3s.

Preston.—Baths.—In Saul-st., for C.B. B.E. and S. Dep. £2 2s.

✱**Rugby.**—Houses.—12, at Pailton, for R.D.C. J. W. Pendred, clerk. Dep. £1 1s.

Sheffield.—Pavilion.—At Hurlfield-rd. playing fields, Intake, for T.C. W. Geo. Davies, F.R.I.B.A., City Architect. Dep. £2.

Sutton Coldfield.—Clubhouse.—In Monmouth-drive, for T.C. P. Barr, B.E. and S. Dep. £1 1s.

✱**Tynemouth.**—Installation.—Of filtration plant to bathing pool, for T.C. John L. Beckett, B.S., 19 and 20, Howard-st., North Shields. Dep. £2 2s.

SEPTEMBER 17.

Ardsley East and West.—Painting.—Of 334 houses on various estates, for U.D.C. F. Arthur Brown, Blackgates School, Tingley, near Wakefield.

Blaenavon. — Erection. — Junior Mixed and Infants' School, at Park-st., for Monmouthshire E.C. John Bain, Newport, Mon. Dep. £5 5s.

Bristol.—Abattoir.—At Gordon-rd., Whitehall, for T.C. H. M. Webb, City E. and C., 63, Queen-sq.

Clown.—Houses.—24, at Bakestone Moor, for R.D.C. W. J. Gallagher, S. Dep. £2 2s.

Croydon.—Erection.—Of dressing cubicles, filtration chamber, offices, lavatories, construction of swimming pool and cascades, also erection of two sports pavilions upon sites at Playing Fields, Purley Way, for C.B. Town Clerk. Dep. £3 3s.

Frome.—Painting.—Exteriors of 18 houses at Faulkland, 8 at Nunney, 2 at Rudge, and 2 at Buckland, for R.D.C. H. L. Burt, Sanitary S.

Grimsby.—Vagrancy Wards.—At Scartho-rd. Institution, for T.C. H. Gilbert Whyatt, B.E. and S. Dep. £2 2s.

Grimsby.—Administration Block.—At Corporation Hospital, Scartho, for T.C. H. Gilbert Whyatt B.E. and S. Dep. £3 3s.

Ilford.—School Buildings.—On site situated in Perryman's Farm-rd., Newbury Park, adjoining Newbury Park School, for B.C. L. E. J. Reynolds, architect, Town Hall. Dep. £5 5s.

✱**Kettering.**—Houses.—36, on Brook-st. site, for U.D.C. E. and S., 3, Gold-st. Dep. £2 2s.

✱**Kettering.**—Erection.—Of public sanitary conveniences in Rockingham-rd. pleasure ground, for U.D.C. E. and S., 3, Gold-st. Dep. £2 2s.

Manchester.—Builder's Work.—And steelwork in switch house and battery room, at Stuart-st. Power Station. H. C. Lamb. Dep. £2 2s.

Market Bosworth.—Offices.—For R.D.C. G. Smith, architect, Moorewood House, Desford.

Neath.—Houses.—46, at various sites, for R.D.C. J. T. Jones, E. and S., Orchard-st. Dep. £1 1s.

Northampton.—Houses.—50, on St. David's estate, Kingsthorpe, for T.C. R. A. Winfield, B.E. Dep. £5.

✱**Woking.**—Erection.—7 houses in Eden Grove-rd., Byfleet, for U.D.C. G. F. Hawkins, E. and S. Dep. £2 2s.

York.—Flats.—24, in Lucas-av., Burton Stone-lane, for T.C. F. W. Spurr, City E. Dep. £2 2s.

SEPTEMBER 18.

Kingston-upon-Hull. — Painting.—At Sculcoates Power Station, and erection of sub-station at Greenwood, for T.C. J. N. Waite, City Electrical E., Ferensway. Dep. £1.

Kingston-upon-Hull. — Extension. — To northern cemetery, for T.C. J. E. Roberts, General Superintendent, Ferensway-chambs., Ferensway, Hull.

✱**Manchester.**—Erection.—Of two blocks of shops at Sale-rd. Circle (south side) on Wythenshawe Estate, for Corporation. City Architect, Town Hall. Dep. £1 1s.

Portsmouth.—Sub-station.—At Eastern-rd. and Vivash-rd., for Electricity Dept. Engineer and Manager, Electricity Dept., 111, High-st.

Sheffield.—Wards.—Two, at Lodge Moor Hospital (Contract No. 3), for T.C. W. Geo. Davies, F.R.I.B.A., City Architect. Dep. £2.

SEPTEMBER 19.

Frome.—Houses.—20 at Coleford, and 10, at Munney, for R.D.C. R. W. H. Vallis, Council's Architect, Monmouth House. Dep. £1 1s.

Henley-on-Thames.—Redecorations.—At "Smith" Hospital, Fair Mile. E. V. Ive, Hillside, Henley-on-Thames.

Jarrow.—Houses.—160, at Monkton, for T.C. B.E. Dep. £5 5s.

Leeds.—Shops.—32, on Ginton, Potternewton, Middleton and York-rd. estates, for Corporation. Town Clerk, Room 57, Civic Hall. Dep. £10.

Leeds.—Houses.—974 on Gipton housing estate, for Corporation. Town Clerk, Room 57, Civic Hall. Dep. £10.

Sevenoaks.—External Painting.—And repairs at North Isolation Hospital, Otford, for R.D.C. S.

SEPTEMBER 20.

✱**Bournemouth.**—Erection.—Post office, garage, and engineers' store, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

✱**Leighton Buzzard.** — Houses. — 24, on various sites, for U.D.C. B. H. Robjaub. Dep. £2 2s.

Reading.—Convenience.—In Kentwood Hill, Tilehurst, near "White House" public-house, for T.C. B.S. Dep. £2 2s.

SEPTEMBER 21.

Durham.—School.—Easington Colliery new intermediate council school, for C.C. F. Willey, F.R.I.B.A., architect to the E.C., 34, Old Elvet, Durham.

Durham. — School.—Bishop Auckland Grammar School, for C.C. F. Willey, F.R.I.B.A., architect to the E.C., 34, Old Elvet, Durham.

Nottingham.—Conveniences.—In Colwick Wood Park, for T.C. T. Wallis Gordon, City E. Dep. £1.

Wallingford.—Dwellings.—11, at Goldsmith's-lane, for T.C. Francis R. Hedges, T.C. Dep. £1 1s.

Washington.—Alterations.—At Biddick school, for Durham County E.C. F. Willey, architect, 34, Old Elvet, Durham.

✱**Westbury-on-Trym, near Bristol.** — Erection.—Hospital at Brenty Colony, for Management. E. R. Abbott, Hon. Sec., 13, Victoria-st., London, S.W.1. Dep. £1 1s.

SEPTEMBER 22.

✱**Andover.** — Erection. — Of municipal offices, museum, public convenience and caretaker's accommodation in Bridge-st., for Corporation. G. Henshaw, Westminster Bank-chams., Andover. Dep £1 1s.

Rowley Regis.—Supplying.—And fixing four wood and glazed screens or partitions at Blackheath Council school, Powke-lane, for T.C. F. T. Wilson, Secretary of E.C.

✱**Sandwich.** — Erection. — Of three houses in Laburnum-av., for T.C. Town Clerk. Dep. £2.

✱**Staffordshire.**—Alterations.—And additions to grammar school, Rugeley, for C.C. F. A. Hughes. Dep. £5 5s.

SEPTEMBER 24.

Blyth.—Houses.—26, on various sites, for R.D.C. A. A. Hipperson, Reydon, Southwold. Dep. £1 1s.

Hadleigh.—Instruction Centre.—At Council school, for West Suffolk E.C. County Architect, 56, Westgate-st., Bury St. Edmunds. Dep. £1 1s.

✱**Kensington.** — Repainting. — Of street lamp columns and lanterns throughout the borough, for B.C. B.E.

Leeds.—Painting.—Exterior only, Market Hall, for T.C. Fred Broadbent, F.R.I.B.A., architect.

Oldham.—Tiling.—Of floors and walls in connection with extension to Public Assistance Offices, Rochdale-rd., for T.C. B.E. and S.

SEPTEMBER 25.

Belfast.—Nurses' Home.—At Royal Victoria Hospital. W. H. Stephens & Sons, chartered surveyors, 13, Donegall-sq. North. Dep. £5 5s.

SEPTEMBER 26.

Liverpool.—Erection.—Of 180 tenement buildings and 2 shops on Myrtle-st. site, for Corporation. Director of Housing, Municipal Annexe, Dale-st. Dep. £2 2s.

Newcastle-on-Tyne.—Alterations.—For conversion into lecture-room at City Hospital for Infectious Diseases, Walkergate, for T.C. City Estate and Property Surveyor.

SEPTEMBER 27.

Aberystwyth.—Houses.—38, at Penparke and block of 3 self-contained flats in Portland-rd., for T.C. Llewelyn Jones, B.S., Corporation Offices, Park-av. Dep. £5.

✱**Coulsdon.**—Erection.—Of 4 pairs of cottages and extension of sewer work to existing drains at Netherne mental hospital, for Surrey C.C. F. J. Hodgson, 201, High-st., Guildford. Dep. £1 1s.

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OCTOBER 2.

✱**Southend.**—Demolition.—Of cottage, stables, outbuildings and stores at rear of 93, London-rd., for Corporation. R. H. Dyer, B.E. and S. Dep. £1.

OCTOBER 3.

✱**Castle Donnington.**—Houses.—4, at Station-rd., for R.D.C. Arthur Eaton & Son, architects, Derby. Dep. £3 3s.

✱**Hertfordshire.**—Erection.—Of new County Council school on Osidge estate, Chase-side, East Barnet Valley, for C.C. A. E. Prescott, C.S., Hatfield. Dep. £2 2s.

OCTOBER 15.

✱**York.**—Demolition.—And removal of prison buildings and enclosing wall on York Castle site, for T.C. F. W. Spurr, City Engineer. Dep. £1 1s.

NO DATE.

Cudworth.—House.—For W. H. Wilson. Symes & Madge, architects and surveyors, Chard.

Maidstone.—Painting.—And decorating at Corn Exchange, Town Hall and Town Clerk's Offices, Tonbridge-rd., for T.C. T. F. Bunting, B.S., Palace-av.

Mumbles.—Repairs.—And alterations to Conservative Club premises. S. T. Ackland, secretary, Mumbles Conservative Club, Mumbles, Swansea. Dep. £1 1s.

St. Albans.—Internal Decoration.—At 8 houses, Brewhouse-hill, Wheathampstead, for R.D.C. Henry F. Mence, L.R.I.B.A., S., 43, Upper Lattimore-rd. Dep. £1 1s

MATERIALS, etc.

SEPTEMBER 10.

London.—Cast-iron Pipes, etc.—For M.W.B. Chief E., Rosebery-av., E.C.1.

Surbiton.—Granite.—For U.D.C. H. T. Mather, E. and S.

SEPTEMBER 13.

Brighton.—Portland Cement.—For T.C. B.E. and S

SEPTEMBER 15.

Plymouth.—Bitumen.—For T.C. J. Wibberley, City E.

Yorkshire. — Road Material. — For West Riding C.C. West Riding Surveyor, County Hall, Wakefield.

SEPTEMBER 24.

Burgess Hill.—Granite.—For U.D.C. W. E. Hancock, S.

SEPTEMBER 25.

Lindsey, Lincs.—Cement.—For C.C. Arthur G. Bradshaw, C.S., County Offices, Newland, Lincoln.

SEPTEMBER 29.

✱**Shrewsbury.**—Supply.—Of furniture at Oswestry Technical Institute, for Salop C.C. W. H. Pendlebury, Secretary for Education, Shrewsbury.

ENGINEERING, IRON AND STEEL.

SEPTEMBER 10.

Brentford and Chiswick.—Purification Plant.—At covered swimming bath, Clifden-road, Brentford, for T.C. L. A. Cooper, A.M.Inst.M.&Cy.E., L.R.I.B.A., B.E. and S., Town Hall, Chiswick. Dep. £3 3s.

Colchester. — Sewer. — Main gravitation outfall sewer with concrete detritus tanks, manholes, etc., for T.C. H. Collins, B.E. Dep. £5 5s.

Halesowen.—Rebuilding.—Of Manor-lane canal bridge, for Worcestershire C.C. B. C. Hammond, C.S., County-bldgs., Worcester. Dep. £2 2s.

Romford.—Sewer.—And screening chamber, etc., for U.D.C. S. Dep. £2 2s.

Uckfield.—Sewerage.—At Rotherfield, for R.D.C. M. G. & R. W. Weekes, chartered civil engineers, 75, Victoria-st., Westminster, S.W.1. Dep. £2 2s.

SEPTEMBER 15.

Ashford (Kent).—Reservoir.—For U.D.C. A. F. Webster, S. Dep. £5 5s.

Leeds.—Rafts.—Reinforced concrete rafts and ducts in extension of Kirkstall generating station, Redcote-lane, Armley, for T.C. C. Nelson Hefford, Manager of Department, 1, Whitehall-rd. Dep. £3 3s.

Leeds.—Boiler House Equipment, etc.—At extension of Kirkstall generating station, for T.C. C Nelson Hefford, Manager of the Department, 1, Whitehall-rd., Leeds. Dep. £5.

SEPTEMBER 17.

Woolwich.—Bridge.—To carry South Circular-rd. over Southern Railway (Dartford Loop Line), at Hornpark-lane, for L.C.C. Chief Engineer, County Hall, Westminster Bridge, S.E.1. Dep. £5 (cheque only).

SEPTEMBER 18.

Sheffield.—Building.—Natural draught cooling tower or towers at Blackburn Meadows generating station; civil and constructional engineering work, including extensions to buildings, and civil and constructional engineering work, including the demolition and reconstruction of existing boiler-house structures at Neepsend generating station, for T.C. E. Morgan, General Manager. Dep. £3 3s. each.

SEPTEMBER 19.

Eaton Socon.—Widening.—Of George bridge, for Bedfordshire C.C. C.S., Shire Hall, Bedford

Riseley.—Reconstruction.—Of bridge, for Bedfordshire C.C. C.S., Shire Hall, Bedford

SEPTEMBER 24

Mere and Tisbury.—Laying.—Of four miles of small asbestos-cement and galvanised steel water mains and a small concrete reservoir for R.D.C. Arthur J. Martin, engineer, 106, St. George-sq., Westminster, S.W.1. Dep. £3 3s.

Egypt.—Remodelling.—**Assiut barrage and Ibrahimia head regulator, for Ministry of Public Works of the Egyptian Government. Coode, Wilson, Mitchell & Vaughan-Lee, consulting engineers, 9, Victoria-st., London, S.W.1.**

SEPTEMBER 25.

Kington.—Pulling Down.—And rebuilding Arrow Bridge, over River Arrow, for Herefordshire C.C. C.S., High Town, Hereford. Dep. £5 5s.

OCTOBER 18.

Egypt.—Stations.—Three complete electric pumping stations with the necessary building work, machinery and accessories, at Northern Nile Delta at Fua, Balamoan and Serw, for Ministry of Public Works. Director-General, Mechanical and Electrical Dept., Ministry of Public Works, Cairo, or 41, Tothill-st., S.W.1. Charge £3 1s. 6d.

ROAD, SEWERAGE AND WATER WORKS.

SEPTEMBER 10.

Meriden.—Construction.—Of about 300 lin. yds. of 9-in. diameter glazed stoneware pipe sewer, with manholes and other works, in Water Orton-rd., Castle Bromwich, for R.D.C. H. Pickering, E. and S.

Newcastle-under-Lyme.—Making-up.— Of Basford Park-rd., Watlands View South, and St. George's av. (part), Wolstanton, for T.C. Arthur Cotton, B.E. and S. Dep. £2.

Sevenoaks. — Road. — Proposed road, Mill Pond Wood, for U.D.C. Harold J. Osborne. E. and S. Dep. £2 2s.

Wimbledon.—Asphalte Surfacing.—In "Parkside," for T.C. B.E. and S. Dep. £2 2s.

SEPTEMBER 11.

Birmingham.—Making-up.—Of carriageway, footpaths, in Anne-rd., Handsworth, for T.C. H. H. Humphries, City E. Dep. £2.

Gateshead.—Paving.—Of various roads, for T.C. F. H. Patterson, B.E.

Islington.—Surfacing.— Of part of carriageways of Stroud Green-rd., N.4, Hornsey-rd., N.19, and Hornsey-rise, N.19, for B.C. B.E.

SEPTEMBER 12.

Sutherland.—Strengthening.—Regulating and surfacing Drumholistan-Melvich road, for C.C. County Road Surveyor, Golspie. Dep. £3 3s.

Wood Green.—Carriageways.—Kerbing, channelling, paving, etc., in various roads, for T.C. R. H. Matthews, B.E. Dep. £1 1s.

SEPTEMBER 15.

Buxton.—Construction.—Of about 2,120 yds. 9-in. stoneware foul and surface-water sewers, with manholes and other works, for T.C. F. Langley, B.E. Dep. £2 2s.

Chesterfield.—Making-up.—Of Walgrove-rd., for T.C. B.S. Dep. £2 2s.

Halifax. — Improvement Works. — At Seedlings Mount-st., for T.C. D. T. Lloyd Jones, B.E., Crossley-st. Dep. £1 1s.

Kingston-upon-Thames. — Reconstruction. — Of Coombe-rd. (part of) and resurfacing of Maple-rd. (part of), for T.C. B.S. Dep. £2 2s.

SEPTEMBER 17.

Dunstable.—Making-up.—Of Olma-rd. (remainder), about 150 ft. in length, for T.C. W. F. Wilkins, B.S. Dep. £1 1s.

Edmonton.—Street Works.—In Church-lane (part) and St. Joseph's-rd. (part), for U.D.C. E. J. Willis, E. and S. Dep. £2 2s.

Largs.—Widening.—Of main shore road at junction near Haylie-gdns., for Ayr C.C. G. S. Barry, C.S., County Buildings, Ayr. Dep. £2 2s.

Swadlincote. — Laying. — And jointing of about 5,600 yds. of steel tube and stoneware pipe sewers, with manholes and storm overflow chambers, from the existing sewage farm at Council-rd. to Midland-rd., for U.D.C. Willcox, Raikes & Marshall, engineers, 33, Great Charles-st., Birmingham. Dep. £10 10s.

SEPTEMBER 18.

Caterham and Warlingham. — Making-up. — Of Commonwealth-rd. and Markville-gdns., Caterham, for U.D.C. E. and S., Council Offices, Caterham Valley. Dep. £2 2s.

***Leek.**—Construction.—Of streets and sewers in connection with Haregate housing scheme, for U.D.C. Chairman of Housing Scheme.

Southport.—Making-up.—Of Carisbrooke-drive, for T.C. A. E. Jackson, B.E. Dep. £2 2s.

Sutton.—Making-up.—Of various roads, for Sutton and Cheam U.D.C. N. H. Michell, S. Dep. £1 1s.

SEPTEMBER 19.

Great Crosby.—Road Works.—At Riverslea-rd., Blundellsands, for U.D.C. Joseph A. Wright, S..

Leeds.—Formation.—Pitching, etc., of roads on Gipton housing estate, Area No. 3, for Corporation. Town Clerk, Room 57, Civic Hall. Dep. £2.

Luton. — Construction.—Of Kingsway surface water sewer, for T.C. J. W. Tomlinson, B.E. and S., 12, Upper George-st. Dep. £2 2s.

Sutton and Cheam.—Soil Sewers.—For U.D.C. N. H. Michell, S., Municipal Offices, Sutton. Dep. £3 3s.

SEPTEMBER 20.

St. Helens.—Sewering.—And sewage disposal in Sutton Manor district, for T.C. A. P. Statham, Borough and Water Engineer.

Wembley.—Making-up.—Of various roads, for U.D.C. Cecil S. Trapp, E. and S. Dep. £1 1s.

SEPTEMBER 21.

Birtley.—Levelling.—And laying-out and preparation of playing field and grounds at East Council school, for Durham E.C. Education Committee, 34, Old Elvet, Durham.

Spennymoor.—Playing Field.—Drainage, levelling, laying-out and preparation of additional playing field at Spennymoor Alderman Wraith secondary school, for Durham C.C. F. Willey, F.R.I.B.A., architect to E.C., 34, Old Elvet, Durham.

SEPTEMBER 22.

Durham.—Making-up.—Of 1-17, Nevilledale-terr., for T.C. J. W. Green, City E. and S. Dep. £1 1s.

SEPTEMBER 25.

Isle of Ely.—Construction.—Of approx. 800 lin yds. of concrete road, for C.C. C.S., County Hall, March. Dep. £5.

SEPTEMBER 27.

Harpenden. — Making-up. — Amenbury-lane and Kirkdale-rd., for U.D.C. W. H. Johnson, S., Harpenden Hall.

OCTOBER 1.

Bakewell.—Construction.—Of about 7,500 lin. yds. glazed ware sewers and other works, for U.D.C. M. G. & R. W. Weekes, civil engineers, 75, Victoria-street, Westminster, S.W.1. Dep. £2 2s.

OCTOBER 10.

Birmingham. — Reconstruction. — Of Rea main sewer from Lawley-st. to Macdonald-st., for T.C. H. H. Humphries, City E. and S. Dep. £2.

Public Appointments.

SEPTEMBER 13.

***London.**—Temporary Assistants in designs branch of the Directorate of Works and Buildings, Air Ministry. Secretary (S.c.2), Air Ministry, Adastral House, Kingsway, W.C.2.

SEPTEMBER 15.

***London.**—Surveyors' Clerks.—For Air Ministry. Secretary (S.2.c), Air Ministry, Adastral House, Kingsway, W.C.2.

SEPTEMBER 19.

***Ipswich.**—Architectural Assistant (Temporary). —For East Suffolk C.C. County Architect.

SEPTEMBER 20.

***London.**—Junior Technical Examiner. Secretary, Civil Service Commission, Burlington-gdns., W.1.

SEPTEMBER 22.

***London, S.W.**—Civilian Garrison Engineers (Temp.).—For establishment for engineer services at Army Stations in Great Britain and Northern Ireland, for War Office. Under-Secretary of State (C.5), War Office, London, S.W.1.

The Tottenham Polytechnic.

The new evening session of the building department of the Tottenham Polytechnic, High-road, N.15, will commence on Monday, September 24. Enrolment week is from Monday, September 10, to Friday, September 14. 7-9 p.m. A prospectus will be sent post free on application to the Principal. The subjects of instruction are as follows:—Building construction; building science; building mathematics: building geometry; structural steelwork; building administration; builders' quantities and estimating; surveying; carpentry and joinery, theory and practice; plumbing and sanitary engineering, theory and practice; brickwork; painting and decorating; welding, etc. Students are prepared for the National Certificates in Building, City and Guilds of London Institute examinations, etc.

Gift to Hove Museum.

Through the friendly intervention of Mr. Selwyn Brinton, M.A., F.R.S.A., of Southwick, Hove Museum has been presented with a carpet for the Victorian Room. This room is a representation of an Early Victorian drawing-room, and practically everything in the room dates from between the accession of Queen Victoria in 1837 and the Great Exhibition of 1851. This Great Exhibition was a turning point in the arts and manufactures. The carpet has been given by Brintons, Ltd., of Kidderminster. It has been woven on contemporary looms from actual designs still in the possession of the firm, which were used nearly a century ago. "The room," a correspondent informs us, "is a little gem."

TECHNICALIA

The Chemistry and Physics of Clays and Other Ceramic Materials. By ALFRED B. SEARLE. London: Ernest Benn, Ltd. One volume. 55s. nett. Second edition.

It is upwards of six thousand years since burnt, and even glazed, bricks were used in Babylonia; yet the output of books and serious articles dealing with the chemistry and physics of ceramic materials is said to be in excess of five thousand a year. The end seems to be still very far from being reached, for the competent author of this valuable book is of opinion that the ceramics of the future will develop along lines as yet but dimly foreseen.

It follows that the earnest student whose future success may be found in the clay industries stands in need of some guidance as to his choice of works for study, for it is clearly impossible that he should read and digest the enormous amount of material offered to him. A close study of the work itself would show it to be a masterly production. Consisting of some seven hundred pages of matter, much of it highly technical, this is not a book for the beginner to tackle without the aid of others of a more elementary character. Yet the ambitious student should quarry in it, for it is full of highly valuable material that must be of value to him. To those who would apply a knowledge of chemistry and physics to the clay-working industries, the stored knowledge here made available will be of great assistance.

The Sanitary Inspector's Handbook. By HENRY H. CLAY, F.R.San.I. London: H. K. Lewis & Co., Ltd. One vol. 15s. net.

This is a work of considerable value and one that may be commended to the notice of others than those for whom it is expressly written. Its scope is wider than that of the class of text-book that is intended to aid the student to pass examinations, though this aspect of the subject has not been neglected. The principal aim of its author appears to be to provide the sanitary inspector in practice with a book to which he may turn for guidance in carrying out duties that are so numerous and in some cases delicate or intricate as to be obviously beyond the capacity of any one man to perform without at least an aid to memory. As the right-hand man of the medical officer of health, the chief (too often the only) sanitary inspector is required to have a wide knowledge of a range of subjects, some of which are difficult and all of which are of importance.

Theoretically, the main duty of administering the Public Health Acts devolves upon the local authorities. In practice, the greater part of an ever-increasing burden of direct responsibility is transferred to the medical officer of health, who in turn largely relies on the detailed technical and practical knowledge of his chief inspector. In the cities and largest towns the duties are generally shared by a number of inspectors who more or less specialise, having made a particular study of one or more of the many subjects. Even so, the multiplicity of duties is such as to make the full performance of all of them very difficult, and in some circumstances practically impossible. That after nearly a century of sustained effort to improve the sanitary conditions of our cities and towns we should nearly everywhere be faced with the slum problem is evidence not so much of want of power as want of personnel. That in small towns of from ten to twenty thousand inhabitants the local authority should so often be content to hand over to one inspector duties that would tax to their utmost the energies of half a dozen trained and competent men, indicates a laxity on which it is not pleasant to reflect.

This book will be found valuable by all whose duties bring them in contact with sanitation and the administration of the various Acts bearing on public health and kindred matters, and there is much in it of interest to the architect and builder.

CURRENT & PROPOSED BUILDING WORK*

Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; B.S. for Borough Surveyor; B.E. for Borough Engineer; D.S. for District Surveyor; C. for Clerk; T.C. for Town Clerk; C.E. for County Engineer; C.S. for County Surveyor; S. for Surveyor; E. for Engineer.

Annfield Plain.—U.D.C. have received sanction from M.H. to borrow £31,251 for 110 houses at Clavering-place; £2,490 for acquisition of land; and £3,315 and £476 for construction of roads and sewers.

Ashton-under-Lyne.—Hurst Bank Estate, Mossley-rd., proposing development of Hurst Bank estate, Mossley, by 58 houses. Plans by Wrathmell & Blackshaw, architects, Queen's-bldgs., Stockport.

Barrow-on-Soar.—R.D.C. approved 102 houses in parish of Birstall for Quain, Ltd.

Biggleswade.—R.D.C. to apply to M.H. to build 24 houses at Arlesey.

Billingham.—Public Works Loan Board have approved application by U.D.C. for £51,616 for 150 houses on Cowpen-lane housing estate.

Birmingham.—Rev. L. Kelly, P.P. of St. Dunstan's, proposes schools, Westfield-rd., King's Heath. —T.C. to erect 319 houses on Broad Meadow estate, King's Norton.

Blackburn.—Trustees of Bethel Mission to erect new mission hall in Regent-st. W. E. L. Crumblehulme, architect, 25, Richmond-ter. Contracts not let.

Blackpool.—Sir Lindsay Parkinson & Co., Ltd., Talbot Saw Mills, had plans prepared for hotel adjacent to Miners' Convalescent Home at Bispham North Shore.—Blackpool Aerodrome Committee propose super sports stadium at Stanley Park. Estimated cost £100,000. Plans by W. Banks, B.S.—T.C. to erect conveniences and passenger shelter at Ansdell-rd. and Waterloo-rd. and a shelter at corner of Park-rd and Blenheim-av. Also public conveniences at Promenade, South Shore.

Bolton.—E.C. propose elementary school for 400 children at Top-o'-th'-Brow estate. Plans by W. Russell Brown, Borough Surveyor, Town Hall.

Bourne.—Steel bridge, costing about £4,000, is to be erected over South Forty Foot watercourse on Gosberton-Dowsby-rd.

Bournemouth.—Over £100,000 to be spent in improvements by the T.C. Schemes already approved include completion of Southbourne promenade, new swimming baths, reconstruction of pier approach, and rebuilding of East Beach Café.

Burnley.—Plans approved by T.C.:—28 houses, Westbourne-av., Russell Bros.; extensions to warehouse, G. Crossley & Sons, Oldham-st.

Castleford.—E.C. of West Riding C.C. to carry out additions at Grammar school. Plans by Mr. Wormald, Education Architect, County Hall, Wakefield.

Crewkerne.—U.D.C. have received notification from M.H. giving consent to borrowing of money to build outdoor swimming pool at Viney Bridge.

Dagenham.—U.D.C. approved:—G. A. Smith, shop, offices and house, Chequers-corner, south of New-rd., Dagenham; C. D. Hassell, petrol-filling station on west side of Whalebone-lane; Mrs. M. Lester, 6 lock-up shops on north side of High-rd., Chadwell Heath.

Darwen.—T.C. approved:—49 houses on sites of George-st. and Woodside Mills, for Dingle Estates (Manchester), Ltd.

Dronfield.—Members of Coal Aston Wesleyan Reform Church propose extensions and provision of Sunday school. Church Secretary, Edith J. Elliott, Cecil-rd. Architect not yet appointed.

Eton.—R.D.C. have received consent of M.H. for loan of £2,386 for Colnbrook housing site.

Gateshead-on-Tyne.—Extensions proposed to central garage, Low Fell, for J. W. Topping, Pentland, Lyndhurst, Low Fell. Architect, J. W. Corking, 16, West-st. No contracts placed.

Guisborough.—North Riding P.A.C. to provide infirmary of 70 to 80 beds and seeking sanction of C.C. Architect, J. R. White, County Hall, Northallerton.—Additions are to be made by North Riding E.C. to grammar school at £3,000. Plans by J. R. White, County Architect.—U.D.C. approved plans for 25 houses in Gill-st. for E. Richardson.

Hebden Bridge.—U.D.C. approved lay-out plan for estate between Foster-lane and Keighley-rd., for A. Windle.

Hemsworth.—U.D.C. seeking borrowing powers for £3,000 in connection with acquisition and adaptation of White Hall, Holly Bank, for use as municipal offices.

Honiton.—Corporation Housing Committee proposes 40 houses.

Hounslow.—T.C. approved:—P. W. Davis, three shops with flats over, High-st.

Huddersfield.—Tenders being invited for additions at "The Unicorn" hotel, Southgate, for John Smith's Tadcaster Brewery Co., Ltd. Plans by B. Wilson, architect to brewery company, High-st., Tadcaster.—T.C. having plans prepared for 156 houses in Alder-st.

Hull.—E.C. propose elementary school at Wymersley-rd. Plans by D. Harvey, A.R.I.B.A., City Architect, Guildhall.

Hyde.—Dean & Whipp, Corporation-st., propose 6 houses, Mona-st., and 26 houses at Knott-lane. Plans by W. Alan Dew, L.R.I.B.A., Market-chams.

Keighley.—Leeds and Wakefield Canal Co., 18, Canal Wharf, Leeds, proposing warehouse, Warehouse Bridge. Plans by own staff.

Kilkenny.—T.C. to acquire by arbitration about 9 acres of land at Butts-gdns. as site for 165 houses.

Kirkham.—U.D.C. have appointed F. Howorth, 10, Theatre-st., Preston, to prepare plans for lay-out of estates and erection of approximately 77 houses.

Leeds.—J. Smith's Tadcaster Brewery Co., Ltd., to erect offices in Vicar-lane, adjoining "The Robin Hood" hotel. Tenders to be invited. Plans by B. Wilson, architect, High-st., Tadcaster.—T.C. approved £120,000 on extensions at Meanwood Park Mental Colony.

Liverpool.—T.C. to sell land in Thingwall-rd., Wavertree, to Pierce, Williams and Son, 141, Upper Warwick-st., for building.—Land on north-east side of Long-lane, Fazakerley, to be transferred to Electric Power and Lighting Committee for sub-station.—Application to be made to Electricity Commissioners for sanction to borrowing of £344,300 for extension of Clarence Dock generating station.—M.H. consented to borrowing by Council: Works on the Larkhill and Springwood estates, Part III. of the Housing Act, 1925, £3,335; and dwellings for working classes, £91,845, £16,665, £352,660 and £236,470.—Housing Committee recommended Director of Housing to prepare plans for 1,000 houses for working classes.—Land on north side of Hall-lane, Speke, also to be transferred to Electric Power and Lighting Committee for electrical sub-station thereon.—Water Committee to proceed with completion of third instalment of Vyrnwy Aqueduct at £668,000, and Water Engineer to obtain tenders. —Land on south side of Childwall-rd. to be sold to Heathside Estates, Ltd., for building.

Macclesfield.—A. E. Powles, F.R.I.B.A., 7, Winnington-st., Northwich, prepared plans for alterations to St. Paul's schools for the School Managers. —Board of Management of infirmary propose nurses' home.

Maidenhead.—G. Alan Fortescue, F.R.I.B.A., 30, Bedford-sq., W.C.1, architect for alterations and decorations at "The Riviera" hotel. The place is being modernised and brought up to date.

Maltby.—U.D.C. approved plans for parish hall in Blyth-rd., for Parochial Council. Architect, Morgan R. Jones, Council Offices.

Manchester.—Council of Manchester University, Oxford-rd., propose medical library, refectory, assembly hall, swimming pool and fives courts. Plans by Thomas Worthington & Sons, FF.R.I.B.A., 178, Oxford-rd. Tenders to be invited.—Rev. Colin Lamont proposes church at Hollyhedge-rd., Benchill, Wythenshawe.

Market Drayton.—Rev. E. J. Adams, Moreton Sey Rectory, and Parochial Council propose church.

Merthyr Tydfil.—T.C. having plans prepared for library at St. David's, at £10,000.

Middlesbrough.—Western Club, Ltd., Middlesbrough, proposing alterations to premises at 151-157, Cannon-st. Plans by Archibald & Archibald, 26, Albert-rd. No contracts placed.—Norman Thompson, Stonehouse-st., Linthorpe, to erect 24 semi-detached houses in Glaisdale-av., on Newham Bridge estate. Plans by Archibald & Archibald, 26, Albert-rd.

Morecambe.—Central Pier, which was destroyed in July last year by fire, is to be reconstructed at between £30,000 and £40,000.

Morley.—F. W. Woolworth & Co., Ltd., acquired Scarth's Wesley-st. mills, which are to be demolished, and a super stores erected.

Newcastle-on-Tyne.—Plans approved by Town Improvement and Streets Committee for Dame Allen's school in Bolbec-rd. Architects, Cackett, Burns-Dick & MacKellar, 21, Ellison-pl.—Mauchlen & Weightman, Collingwood-st., architects for showroom premises in Eldon-lane. No contracts let.—Carricks (Caterers), Ltd., to extend bakery in St. Mary's-pl. Architects, Marshall & Tweedy, 129, Pilgrim-st.—Embleton & Sons to carry out alterations at 490, City-rd. Architect, C. J. M. Lowe, 40, East-av., Benton. No contracts let.—Hetherington & Wilson, 52, Westgate-rd., prepared plans for additional story to Dex Garage in New Bridge-st. No contracts let.—Extensions to be made to premises of Fenwick & Sons, drapers, etc., Northumberland-st. Contracts not yet let. Plans by Mauchlen & Weightman, Collingwood-st.—Garage to be erected in Jesmond-rd. Architects, Dixon & Bell, Pearl-bldgs.—City Council to construct loading dock at cattle market. Contract not yet let. Architect, F. H. Holford, City Architect.

North Riding.—Sanction received by E.C. for extensions to Pickering Lady Lumley grammar school and Richmond grammar school. Plans by J. R. White, County Architect, County Hall, Northallerton.

Norton.—U.D.C. approved plans by Council's architect for 6 two-bedroomed houses, 6 four-bedroomed and 12 three-bedroomed houses at Beverley-rd. Tenders are to be invited.

Norton Radstock.—U.D.C. proposes 26 houses at £8,400 at Clandown. E. A. Chivers, clerk of works.

Nuneaton.—T.C. passed:— Geo. Cooper & Sons (Nuneaton), Ltd., 22 houses, Ansley-rd.; P. James, warehouse, Victoria-st.

Oldham.—Ministry of Labour considering employment exchange on land adjacent to Gas-st. and Bridge-st.—R. H. Hughes, 16, Withins-rd., Hollinwood, nr. Oldham, proposes service garage at Wellington-st., Failsworth.

Paignton.—U.D.C. to apply to M.H. to borrow £24,800 for new promenade from the cliff promenade to Goodrington Park, and for the laying out of the park.

Plymouth.—T.C. approved £99,509 on foreshore improvements.

Runcorn.—W. H. Davey, builder, Taylor's-row, Halton-rd., proposes development of Grange Park estate, by 26 houses.

Salford.—Walker & Homfray, brewers, Woodside Brewery, Eccles New-rd., propose reconstruction of "Globe Hotel," 61-63, Regent-rd. Architect, Col. George Westcott, F.M.S.A., 13, Bridge-st.—Sanction has been given by Building and Development Committee to Hill and Sons, Pendleton, to build 400 houses in Lancaster-rd. and Light Oaks-rd. areas of Pendleton.—C.B. recommended application to M.H. for land in Police-st., Pendleton, for proposed public assistance offices.

Scarborough.—Laughton's, Huntriss-row, propose extensions to "Pavilion" Hotel, Westborough. Architects, Jones & Rickaby, 102, Westborough.—Jones & Rickaby, architects, 102, Westborough, preparing plans for alterations to 32, Nicholas-st., for Halifax Building Society, Commercial-st., Halifax.—Tenders to be invited by T.C. for underground conveniences at Westborough. J. P. Watson, B.E.

Sheffield.—Methodist Church members (Peter-st. Circuit), Rev. J. W. Swarbrick, M.A., Minister, secured site on Shire Green estate for church.

Sherburn.—Westminster Bank, Ltd., to erect a sub-branch bank at Main-rd.

Silsden.—Vicar, Rev. E. E. Peters, and Parochial Council of parish church propose church.

Stafford.—C. W. Miller, L.R.I.B.A., 15, Greegate, architect for development of estate at Doxey. 60 houses proposed.

Staincross.—Members of Higham Methodist Church, Higham-lane, propose church and Sunday school. Architect, J. R. Wilkinson, 15, Regent-st., Barnsley.

Stockport.—E.C. propose elementary school in Garner's-lane, Adswood. Plans by Education Architect, Leonard Yates, Town Hall. Tenders to be invited.

Stretford.—E.C. propose elementary schools at Barton-rd., Lostock, and at Cromwell-rd. Architect, Percy Howard, A.R.I.B.A., 88, Mosley-st., Manchester.

Sunderland.—Δ. Suttel, 2, Victoria-av., Harrogate, prepared lay-out plans for development of building estate nr. Newcastle-rd., including 71 houses. Promoters, Atkinson (Darlington), Ltd.—£171,400 scheme for extensions to Borough Mental Hospital been approved by Visiting Committee of Sunderland. Plans by B.E.

Swinton (Lancs).—Palatine Builders and Estates, Ltd., 17, St. Ann's-sq., Manchester, propose development of Springwood estate, for 48 houses.

Tadcaster.—Plans approved for extensions at Old Brewery for Saml. Smith's Old Brewery Co., Ltd. Tenders to be invited.

Todmorden.—E.C. to ask T.C. to apply for sanction to loan of £4,950 for open-air school, and to send final plans and estimates to B. of E.

Tottenham.—U.D.C. to invite tenders for proposed public baths, to cost £30,000.

Wallasey.—Birkenhead Brewery Co., Ltd., Oxton-rd., Birkenhead, propose rebuilding "Wellington" hotel. Plans by Staff Architect, H. Coveney.

Weetslade.—Application been made to M.H. by U.D.C. for sanction to build 100 more houses.

West Lancashire.—R.D.C. acquired site at Ormskirk for Council offices.

Wexford.—Board of Health to build 1,000 more houses.

Widnes.—M.H. to grant Corporation £4,475 for repairs and maintenance of houses on Fairfield housing estate.

* See also List of Contracts open.

*** **In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

Easily the best, but strictly competitive. Simple to order and erect.

Trained representatives wait upon you on request.

We invite you

to send for our technical guide and plan book—*free.*

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Telephone: GRANGEWOOD 0247 (2 lines)

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to Mortlake.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 10 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
"Phorpres"	2 11 3	Flettons, B'll'n'se	3 6 3
Flettons at King's Cross	2 11 3	Best Blue Pressed Staffs	8 5 0
Do., grooved for Plaster	2 13 3	Do. Bullnose	8 15 0
		Blue Wire Cuts	7 0 0

White Midhurst Facing Bricks (delivered London site) 5 0 0
"Phorpres" whites (do.) 3 17 3
"Phorpres" Rustic Facing Bricks, delivered Central London ..... per 1,000 3 12 3
Best Stourbridge Fire Brick:—
2½ in. ..... 7 15 0 3 in. 8 15 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
Headers	20 10 0	One side and two Ends	30 10 0
Quoins, Bull-nose and 4½ in. Flats	27 10 0	Two sides and one End	31 10 0
		Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup	2 0
2½ " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½ " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" × 9" × 2"	2 3	12" × 9" × 3"	2 9
12" × 9" × 2½"	2 6	12" × 9" × 4"	3 6

Per yard super d/d. Free on site, London.

	s. d.	
Thames Ballast	7 3 per yd.	delivered
Pit Ballast	6 3 " "	2 miles radius Padding-ton.
Pit Sand	7 9 " "	
Washed Sand	8 3 " "	
¾ in. Shingle	7 3 " "	
¾ in. Broken Brick	11 3 " "	
Pan Breeze	8 3 " "	

CEMENT.

Best British Portland Cement, Standard Specification, delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable):—

	£ s. d.
4 ton loads and upwards site ..... Per ton.	1 18 0
1 ton to 4 tons site	2 0 0
Alongside Vauxhall in 80-ton lots	1 14 0
"Ferrocrete" Rapid Hardening Cement:—	
4 ton loads and upwards site	2 4 0
1 ton to 4 tons site	2 6 0
Alongside Vauxhall in 80-ton lots	2 0 0

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett if returned in good condition within three months, carriage paid.

"Colorcrete" Nos 1 and 2 Coloured Rapid Hardening Portland Cement in 1 cwt. paper bags free (non-returnable) in 1-ton lots and upwards site	3 6 0
"Snowcrete" White Portland Cement in 1 cwt. paper bags free (non-returnable) 1 ton and upwards site	8 15 0
Super Cement (Waterproof) paper bags free	3 8 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0

PLASTER.

Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	4 12 0
Sirapite, Coarse	3 8 0
" Finish	3 16 0
Grey Stone Lime	2 5 0
Chalk Lime	2 5 0
Best Ground Blue Lias Lime	1 17 6
Hair ..... per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 6d. each and credited 1s. 6d., if returned in good condition within three months carr. pd.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dep.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE—RANDOM BLOCK—	
Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road waggons at above stations, per ft. cube	4 5½
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	
F.O.R. Quarries Wirksworth, Derbyshire, Random blocks from 10ft. and over P.ft.cb.	s. d. 14 0
Sawn two sides	22 6
Sawn, three or four sides	27 9
CHILMARK—RANDOM BLOCK—	
At Nine Elms, per ft. cube	3 11
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... Per ft. super	5 6
6 in. rubbed two sides, ditto ..... "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	1 6½
1½ in. to 2 in., ditto ..... "	1 3½
HARD YORK—	
Delivered at any Goods Station, London.	
Scappled random blocks ..... Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) ..... Per ft. super	5 1½
6 in. rubbed two sides, ditto ..	6 1½
4 in. sawn two sides slabs (random sizes) "	3 1½
3 in. ditto ditto "	2 8
2 in. self-faced random flags .. Per yd. super	7 6

CAST STONE.

Delivered in London area in full van loads, per ft cube: Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11	£23 10	3 × 6	£18 10
4 × 9	22 10	3 × 11	19 10
4 × 8	21 0	2 × 11	19 10
4 × 7	19 0	3 × 9	19 10
3 × 8	18 0	2½ × 9	19 10
3 × 7	18 10	3 × 4½	18 0
2½ × 7	18 10	3 × 4	18 0

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	16/-	1½	26/-
¾	17/-	1¾	32/6
1	20/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	21/-
1½	26/-
1½	32/6

MATCHING (BEST).

Inches.	per sq.
⅝	16/-
¾	18/6
1	22/6

ins. BATTENS.	s. d.
¾ × 2 .. per 100 ft. run	2 6

SAWN LATHS.

	s. d.
Per bundle	2 3

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.

	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

SLATES.

First quality slates from Bangor or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12 ..	29 15 0	18 by 10 ..	15 12 6
22 by 12 ..	25 0 0	18 by 9 ..	13 15 0
22 by 11 ..	22 10 0	16 by 10 ..	13 10 0
20 by 12 ..	22 0 0	16 by 8 ..	10 7 6
20 by 10 ..	19 7 6		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons.

	Per 1,000 f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£4 7 0
ditto hand-made ditto	5 0 0
Ornamental ditto	5 8 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	£11 0 0
Plain Compound Girders	12 0 0
" " Stanchions	15 0 0
In Roof Work	18 0 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝ in. to ¾ in.	10 15 0
½ in.	11 0 0	⅞ in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛ in. to 6 in.	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛ in. to 6 in.	Standard Fittings Sizes ⅛ in. to 6 in.	Standard Flanges Sizes ⅛ in. to 6 in.
	%	%	%	%
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv. gas	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Price ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/5½	1/1½	4½d.
3½ in.	1/6½	1/3	5½d.
4 in.	1/8½	1/4½	6½d.
4½ in.	1/8	1/6½	9½d.
5 in.	1/10½	1/8½	10d.

O.G. GUTTERS.

3 in.	1/7½	1/5½	7d.
3½ in.	1/9½	1/5½	7½d.
4 in.	1/11	1/6½	8½d.
4½ in.	2/0	1/9½	9½d.
5 in.	2/4½	2/0½	11½d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock Branches, angles, stock angles.
2 in.	2/2½	1/4½ 2/0
2½ in.	2/3½	1/6½ 2/4½
3 in.	2/9½	1/11 2/10½
3½ in.	3/3½	2/3½ 3/3½
4 in.	3/9	2/9 4/0½

Less 20 per cent. trade discount.

Tonnage allowance—4 ton lots, 5 per cent.
2 ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock.

	Pipe.	Bends, stock Branches, angles, stock angles.	
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts.	2 8	1 11	2 3
2½ in. "	3 0	2 1	2 10
3 in. "	3 4	2 3	3 5
3½ in. "	2 7½	2 10	3 11
4 in. "	4 0	3 2	4 6

L.C.C. COATED DRAIN PIPES—London Prices ex Stock.

	Pipe.	Bends, stock Branches, angles, stock angles.	
	s. d.	s. d.	s. d.
3 in. per yd. in 9 ft. lengths	3 0	4 6	7 0
4 in. " cwt. qr. lbs. 1 1 20 ..	4 9	5 6	8 9
5 in. " 1 2 22 ..	5 10	9 6	13 6
6 in. " 2 0 6 ..	6 10	12 6	18 0

Gaskin for jointing 41/- per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common bars	10 0 0	to	10 10 0
Staffordshire Crown Bars—			
Good merchant quality	10 10 0	to	11 0 0
Staffordshire Marked Bars	14 0 0	..	15 0 0
Mild Steel Bars	9 0 0	..	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 10 0	..	9 0 0
Hoop iron, basis price	11 0 0	..	12 0 0
" Galvanised	27 10 0	..	28 10 0
Soft Steel Sheets, Black—			
Ordinary sizes, to 20 g.	11 0 0	..	11 10 0
" " " 24 g.	12 0 0	..	13 0 0
" " " 26 g.	14 0 0	..	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	14 0 0	..	15 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	15 0 0	..	16 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 10 0	..	18 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	13 10 0	..	15 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 10 0	..	18 0 0
Sheets, Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	14 10 0	..	16 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	15 0 0	..	17 0 0
Best Soft Steel Sheets, 26 g.	16 10 0	..	18 0 0
Cut Nails, 3 in. to 6 in.	15 10 0	..	17 0 0
(Under 3 in. usual trade extras.)			

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

	s. d.
Seamless Copper tubes (basis) ..... per lb.	0 9
Strong sheet ..... "	0 10
Thin ..... "	0 11
Copper nails ..... "	1 0
Copper wire ..... "	0 11

PLUMBERS' BRASS WORK.

Delivered in London

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*contd.*).

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.	
39/-	60/-	116/6 per doz.	

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
7/6	10/-	14/-	23/-	30/-	42/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
7/6	11/-	17/-	29/-	36/-	63/-	per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.	
10/-	12/-	20/-	24/-	31/-	per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F.

½ in.	¾ in.	1 in.	1½ in.	1½ in.	
35/-	56/-	98/-	162/-	228/-	per doz.

DRAWN LEAD P. & S. TRAPS WITH GRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps ..	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps ..	35/-	45/-	66/-	126/-	,,

TIN.—English Ingots, 2/5 per lb. SOLDER.—Plumbers' 1/-, Ti n's, 1/2, Blowpipe, 1/3 per lb.

LEAD, &c.

(Delivered in London.)	£	s.	d.
LEAD—Sheet, English, 4 lb. and up	18	10	0
Pipe in coils	17	0	0
Soil pipe	24	10	0
Compo pipe	25	0	0

NOTE.—Country delivery, 20s. per ton extra; lots under 3 cwt. 4s. per cwt. extra, and over 3 cwt. and under 5 cwt., 2s. 6d. per cwt. extra. Cut to sizes, 4s. cwt. extra.

Old lead, ex London area, at Mills.....per ton £9 10 0

PAINTS, &c.

	£	s.	d.
Raw Linseed Oil, in pipes .... per gallon	0	2	6
,, ,, ,, in barrels .... ,,	0	2	8
,, ,, ,, in drums .... ,,	0	2	11
Boiled ,, ,, in barrels .... ,,	0	2	9
,, ,, ,, in drums .... ,,	0	2	11
Turpentine, in barrels ..... ,,	0	3	11
,, in drums (10 galls.) ,,	0	4	1
Genuine Ground English White Lead, per ton	44	0	0
(In not less than 5-cwt. casks.)			
Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.			
GENUINE WHITE LEAD PAINT.			
"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots per ton delivered	62	0	0
Red Lead, Dry (packages extra).... per ton	31	0	0
Best Linseed Oil Putty .....per cwt.	0	13	6
Size. XD quality .....fkn.	0	3	0

VARNISHES, &c.

		Per gallon		
Oak Varnish .....Outside		0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Opal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	0
Fine Copal Flatting	ditto	1	0	0
Hard Drying Oak	ditto	0	18	6
Fine Hard Drying Oak	ditto	0	19	6
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	12	6
Best ditto	ditto	1	2	6
Best Japan Gold Size		0	12	0
Best Black Japan		0	10	0
Oak and Mahogany Stain (water)		0	12	6
Brunswick Black		0	7	0
Berlin Black		0	14	0
Knotting (patent)		0	15	0
French and Brush Polish.....		0	12	0
Liquid Dryers in Terebene		0	9	0
Cuirass Black Enamel		0	7	0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	per ft.		per ft.
15 oz. fourths ..	2¼d.	32 oz. fourths	6½d.
15 ,, thirds	2½d.	32 ,, thirds	8½d.
21 ,, fourths ..	3¼d.	Obscured Sheet, 15 oz.	3d.
21 ,, thirds	3½d.	,, ,, 21 ,,	4½d.
26 ,, fourths ..	4½d.	Fluted, 15 oz. 6½d., 21 0z. 9d.	
25 ,, thirds	5½d.	Em'lld, 15 oz. 4½d., 21 oz. 5½d.	

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
Rolled plate ¼ in.	4½d.
Rough rolled ⅜ in.	5½d.
Rough rolled ½ in.	5½d.
Figured, Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted ditto	6½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	Per ft. s.	d.
Clearsheet—not exceeding 1 foot	1	0
Do. do. 2 feet	1	3
Do. over 2 feet	1	9
Polished plate—not exceeding 1 foot	1	6
Do. do. 2 feet	3	0
Cathedral—not exceeding 1 foot	1	0
Do. larger sizes	1	6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1	0
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide.....	2	6

NEW BUILDINGS IN SCOTLAND

BUCKHAVEN.—HOUSES.—The T.C. has decided to proceed with another slum-clearance housing scheme, totalling 24 houses.

DUMFRIES.—BUILDING.—Plans for a new slaughter-house, to be erected by the T.C. on a site at Huntingdon-road, have been passed by the Dean of Guild Court. The estimated cost is £18,500.

DUNDEE.—RESERVOIRS.—The erection of two service reservoirs at £46,000 has been recommended by the Corporation's water engineer, Mr. George Baxter, jun.

DUNDEE.—BUILDINGS.—Plans and sections of the following proposed new buildings, etc., have been lodged at the office of the City Engineer :—160, Hawkhill, alterations to cinema for Mrs. McIntosh, architects, Allan and Friskin, 26, Castle-street; King's-road—store and workshop for M. R. Ingram and Co., architects, Maclaren, Soutar and Salmond, 15, South Tay-street; Kingsway East—bungalow for A. Downie, architect, James Clunie, 5, Kirkton-road; Seymour-avenue — bungalows for W. Black, architect, W. M. Patrick, 26, Yeaman-shore; Seymour-street—garage for J. Moodie, architects, Thoms and Wilkie, 21, South Tay-street.

EDINBURGH.—BANK.—The directors of the National Bank of Scotland, Ltd., have under contemplation various proposals for reconstruction and extension of their premises, and have finally resolved to proceed with a scheme of complete demolition and rebuilding of 9 and 11, George-street. The architects are Messrs. Thomas P. Marwick and Son, F. and A.R.I.B.A., F. and A.R.I.A.S., 54, Northumberland-street. The building at present occupied as the head office is situated at the south-east corner of St. Andrew-square, and the architects engaged for the new building to be erected on this site are Mr. Leslie G. Thomson, A.R.I.B.A., F.R.I.A.S., Edinburgh, and Mr. Arthur J. Davis, A.R.A., F.R.I.B.A.

GLASGOW. — ADDITIONS. — Plans are in hand for reconstruction and additions for the Co-operative Society, Ltd. Mr. James Thomson, architect, 212, Bath-street.

GLASGOW.—FACTORY.—New premises are in course of construction at Craigton-road, for Messrs. Melville, Dundas and Whitson, public works contractors, Glasgow. Plans for the new building have been prepared by the company's engineering staff.

GLASGOW. — ALTERATIONS. — Are to be carried out at the North British Locomotive Co.'s Hyde Park Works, Springburn.

HAMILTON.—HOUSING.—The Dean of Guild Court has approved plans submitted by the Town Council for the erection of 52 houses in Gateside-street and Burnside-lane at £25,000.

KILSYTH.—HOUSES.—The T.C. are to proceed with 300 houses under the 1930 Act at Bargill. The Department of Health for Scotland has been asked to approve of the first instalment of 152 houses.

KIRRIEMUIR.—HOUSING.—The Town Council has approved of plans for a block of two three-roomed houses at Brechin-road, a hostel block of eight one-roomed houses at Tillyloss, and two four-roomed houses at Croft-terrace.

NAIRN.—HOUSES.—The Corporation are to erect 20 houses. Mr. J. A. G. Peter, F.I.A.S., Burgh Architect.

TRADE NEWS

A New Electric Lamp.

That modern applied science admits of no finality in anything is being proved almost daily. The electric lamp is the latest example of this. In the case of the tungsten filament lamp, the efficiency of conversion of electricity into light has been increased step by step for over 25 years without any sacrifice of the standard average life of 1,000 hours and with marked improvement in the uniformity of performance. A new development is the "coiled coil" filament, claimed by the makers, the General Electric Co., Ltd., to be so economical that a high voltage 40-watt lamp equipped with such a filament actually gives 20 per cent. more light. This is an important advance upon the previous type of gas-filled lamp of the same consumption which had the ordinary single-coil filament. At present only 40-watt lamps are available with this new filament, but 60-watt lamps will be available early in 1935. Though the production of "coiled coil" filaments involves a very difficult and costly technique, lamps with "coiled coil" filaments are now available at the same price as the ordinary types. The whole of the benefit of this great technical advance is thus given to the user, who in future will enjoy this great increase in light output without extra cost. Details are available from Magnet House, Kingsway, W.C.2.

Foot-Safety on Stairs.

A striking leaflet has been produced by the Adamite Company, Ltd., to introduce a new product—the "Alundum" bonded safety tread for stairs. These treads offer in a replacement type of unit the same permanent safety and excellent durability which have made "Alundum" stair and floor tile and "Alundum" aggregate so widely used. They can easily be applied to old and worn stairways by a carpenter and may be used to cover the whole depth of the tread or merely the nosing, the remaining area being filled with wood, rubber tiling, linoleum or other suitable material. Being unaffected by weather, they can be used in exposed positions out of doors. The treads are composed of "Alundum" aggregate securely moulded into a reinforced base of rubber. The rubber is so vulcanised as to be hard and tough, yet sufficiently resilient to adapt itself to any unevenness in the surface to which the treads are applied. The "Alundum" aggregate is carried round the curved nosing of the tread, thus providing permanent safety where the foot pivots. A copy of the leaflet is obtainable from Manfield House, Strand, W.C.2.

BUILDING TRADE WAGES IN SCOTLAND*

Following are grade rates authorised by the Scottish N.J.C. for Building Industry. Painters by ruling of the Scottish National Painters' and Decorators' Joint Council, have from January 1 new rates. Grade A towns, 1/6 per hour; Grade B, 1/4; Aberdeen has a special rate of 1/5½. The new rate for Plasterers has been fixed at 1s. 6½d. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification ...	A	A¹	A²	A³	B	B¹	B²	B³
Craftsmen	1/6	1/5½	1/5	1/4½	1/4	1/3½	1/3	1/2½
Labourers	1/1½	1/1½	1/0½	1/0½	1/0	/11½	/11½	11

Aberdeen .....A	Dundee .....A	Hawick .....A²	Perth .....A		
Airdrie .....A	Dumfermline .....A	Helensburgh .....A	Perthshire .....A²		
Alexandria .....A	Dunoon .....A	Inverness .....B	Peterhead .....A²		
Arbroath .....A²	East Lothian ....A	Kilmarnock .....A	Renfrewshire .....A		
Ayrshire .....A	Edinburgh .....A	Kincardineshire ..A²	Rothesay .....A		
Bathgate .....A	Falkirk .....A	Kinross-shire .....A	Roxburghshire ....A²		
Bo'ness .....A	Forfarshire .....A²	Kirkcaldy .....A	St. Andrews .....A		
Broughty Ferry ....A	Fort William .....B	Lanarkshire .....A	Selkirkshire .....A		
Clackmannanshire ..A	Galashiels .....A²	Leith .....A	Stirling .....A		
Coatbridge .....A	Glasgow .....A	Midlothian .....A	Stirlingshire, West A		
Dumbartonshire ....A	Greenock .....A	Motherwell .....A	West Lothian.....A		
Dumfries .....A²	Hamilton .....A	Peeblesshire .....A²	Wishaw .....A		
Dumfriesshire .....A²					

* The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 406.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	8	9
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	3
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundations 1 to 6	per yard cube	24	3
Add if in underpinning in short lengths	,, ,,	5	6
Add if in floors 6 in. thick	,, ,,	2	3
Add if in beams	,, ,,	2	9
Add if aggregate 1 : 2 : 4	,, ,,	9	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	27	0	0
Add if in stocks	,,	7	0	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	5	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	0	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	0	11
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	0

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	9
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	15	6
Chilmark stone fixed complete	,, ,,	16	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap. including nails	per square	78	6
Do. 20 in. × 10 in. Do. Do.	,,	80	6
Do. 24 in. × 12 in. Do. Do.	,,	86	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	4	0
Do. joists	,, ,,	4	6
Do. roofs, floors and partitions	,, ,,	5	0
Do. trusses	,, ,,	7	3

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	30/-	35/-	43/-	70/-
Flat centering for concrete floor, including struts or hangers	,,				50 0
Do. to beams	per ft. sup.				0 9
Centre for arches	,,				1 6
Gutter boards and bearers	,,				1 0

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	38/-	45/-	52/-
Do. tongued and grooved	,,	—	43/-	50/-	58/-
Do. matchings	,,	40/-	45/-	—	—
Moulded skirtings, including backings and grounds	per ft. sup.	1/4	1/7	1/9	2/3

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights, average size	,,	3	6

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/3	2/5
Four-panel Do.	,,	2/4	2/6	2/9
Two-panel moulded both sides	,,	2/6	2/9	2/11
Four-panel Do. Do.	,,	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	12	6

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/2	1/4	1/7
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1½ in.	per ft. run	0	9
Mahogany handrail, average 3 in. x 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	0
Plain compound girders	,,	18	0
Do. stanchions	,,	20	9
In roofwork	,,	26	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	...ft. run	1/-	1/1	1/3	1/6
Ogee Do. Do.	,,	1/2	1/3	1/9	2/3
Rain-water pipes with ears	,,	1/3	1/10	—	—
Extra for shoes and bends	each	2/9	3/11	—	—
Do. stopped ends	,,	1/1	1/4	1/9	2/6
Do. nozzles for inlets	,,	2/2	2/7	3/7	4/-

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	38	0
Do. do. flats	,,	37	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1½	1/4	1/6½	2/5	2/8	—
Do. service...	,,	1/3	1/9	2/-	3/-	—	—
Do. soil	,,	—	—	—	—	—	5/9
Bends in lead pipe	each	—	—	—	—	2/6	6/-
Soldered stop ends	,,	0/9	1/1	1/6	2/3	2/10	—
Red lead joints	,,	0/10	0/11	1/2	1/9	2/1	4/3
Wiped soldered joints	,,	2/3	2/9	3/0	3/10	4/10	6/9
Lead traps and cleaning screws	,,	—	—	—	10/6	14/-	—
Bib cocks and joints	,,	6/4	9/7	14/-	—	—	—
Stop cocks and joints	,,	12/4	14/2	20/8	54/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	0
Do. Do. Sirapite	,, ,,	2	3
Do. Do. Keen's	,, ,,	3	0
Add saw lathing	,, ,,	1	4
Add metal lathing	,, ,,	2	4
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	4	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	6½
26-oz. Do.	,, ,,	0	7¾
Obscured sheet	,, ,,	0	8
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10
¼-in. wired cast plate	,, ,,	1	1

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece 2/- to	4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Act, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

NEW CINEMAS

The Editor is glad to receive for publication details of proposed new cinemas. Such information should reach this office not later than Wednesday morning.

BLACKPOOL.—Work is expected to begin in the autumn on the construction of a 12-story £300,000 hotel on the cliffs at Bispham, near Blackpool. A ballroom, roof garden, open-air swimming pool, a news cinema, and tennis and squash-racket courts are included in the scheme. The hotel is to be built by Sir Lindsay Parkinson and Co., Ltd., and the plans have been submitted to the Blackpool Corporation.

DARLINGTON.—The contract for the erection of the new Regal Cinema, High-street, Stockton, for the Regal Cinema, Ltd., has been placed with Messrs. Robert G. Tarran, Ltd., Ryde-avenue, Hull, and work is to start immediately. The building, to cost £35,000, will accommodate 2,150 people. The architect is Mr. Joshua Clayton, F.R.I.B.A., High Row-chambers, Darlington.

DOUGLAS, I.O.M.—The Grand Theatre is to be reconstructed as a cinema for Palace and Derby Castle Company, Ltd.

MIDSOMER NORTON.—A contract for rebuilding the "Palladium" has been placed with Messrs. S. W. Foster, Ltd., Coombend, Radstock, Bath. Certain sub-contracts have been also placed. Plans are by Mr. F. J. Rogers, Radstock, Somerset. The work is for Mr. W. T. Dicken, Majestic Cinema, Burnham, Bath.

NORTHAMPTON. — Messrs. Brown and Henson, architects, 83, St. Giles's-street, Northampton, are architects for a cinema proposed at Far Cotton, to seat 850. Shops are included in the scheme. A building contract has been placed with Messrs. Weston and Underwood, Northampton.

SOUTH SHIELDS.—A company, Black's South Shields Theatre Co., Ltd., is to acquire the "Empire" for reconstruction as a cinema. Plans are by Mr. Edwin M. Lawson, A.R.I.B.A., 19, Ridley-place, Newcastle-on-Tyne.

THROCKLEY.—Lyric Kinema (Throckley), Ltd., is being formed to erect a cinema to seat 850, with shops and a public hall attached, at Newburn-lane, Throckley, Northumberland. Mr. E. J. Hinge, "The Palladium," Groat Market, Newcastle-upon-Tyne, is managing director. Plans are by Messrs. P. L. Browne and Son, Pearl-buildings, Newcastle-upon-Tyne, and a building contract has been placed with Messrs. Walter Wilson, Ltd., Newcastle-upon-Tyne.

WIGSTON.—Plans for the cinema, to seat 804 persons, at Long-street have been passed by Leicestershire C.C. Plans are by Mr. Frank H. Smith, 6, Pocklington-walk, Leicester.

CONCRETE PIPES AND TUBES

THE British Standards Institution has recently issued a new specification relating to cement concrete cylindrical pipes and tubes (not reinforced) of nominal diameters of 6 in. and upwards. The specification ensures an appropriate quality for the concrete by the inclusion of requirements as to the cement and aggregate and the proportions of the mixture, and by hydraulic pressure, absorption and crushing tests. Owing to the many different processes by which concrete pipes are manufactured, it was not found practicable to standardise thicknesses, nor have the designs of the sockets of the O.G. and rebated ends been standardised in detail, but variations in the thickness of the walls of individual pipes is controlled, and such dimensional requirements as will secure interchangeability between pipes have been included. Copies (B.S.S. No. 556-1934) may be obtained from the Publications Department, British Standards Institution, 28, Victoria-street, London, S.W.1, price 2s. 2d., post free.

TENDERS

Comunications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday morning.

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.
¶ Denotes *accepted by H.M. Government Departments*.

Aberdeen.—New housing scheme, for the Corporation. Mr. Alexander Gardner, Housing Architect, Broad-street :—

Excavation, brick and mason—			
*J. Shirras & Son	£17,118	3	1
*A. Duffas	16,976	7	9
Slating and roughcasting—			
*J. Durwin	2,950	7	1
Plumber—			
*W. Barnett	8,465	6	6
Painter—			
*Robert Milne	2,407	17	9
Iron railings and gates—			
*A. & J. Main & Co., Ltd., Glasgow	644	18	5
Electrical installation and fittings —			
*Strand & Weir	984	0	0
Joiner and ironmongery—			
*R. & J. Reid, Ltd.	19,168	19	0

(Remainder of Aberdeen.)

Aberfeldy.—Housing scheme and tenements :—
Excavation, brick and mason work, etc.—*W. Duff & Son, Cupar.
Plumber work—*A. & J. Menzies, Aberfeldy.
Joinery, carpentry and ironmongery—*Stuart Warren, Cupar.
Slater and roughcast work, etc.—*W. Stewart, Aberfeldy.

Ballina.—34 houses at Bunree-road, for the U.D.C. :—
*E. Naughton.

Barrow-in-Furness.—New Church of St. John, on Barrow Island, for the Parochial Council of St. John's Church. Messrs. Seely & Paget, architects, 41, Cloth Fair, London, E.C.1 :—
Reinforced concrete structure—*Johnson's Reinforced Concrete Engineering Co., Ltd., London, S.W.1.
Roof finishings — *Rainey Bros., Barrow-in-Furness.

MARBLE
NEW IDEAS
IN THE OLD
PIONEERS
IN THE NEW
JOHN STUBBS & SONS
WORKS
LONDON & LIVERPOOL

Belfast.—For general repairs to labourers' cottages, for the R.D.C. Mr. W. D. R. Taggart, engineer, Council Office, Union Workhouse :—
H. M. Laughlin & Sons, Whitehouse ... £153

Birkenhead.—Office building and assembly hall, in Glebeland-road, for the Transport and General Workers' Union. Messrs. Culpin & Bowers, FF.R.I.B.A., architects, 3, Portsmouth-street, London, W.C.2 :—
*T. W. Bradshaw, Wallasey.

Bolton.—Offices for Messrs. I. Pearson, Ltd., Gladstone-street Mill. Plans prepared in the architects' department of the Fine Cotton Spinners' and Doublers' Association, Ltd., St. James-square, Manchester :—
Builders—*Wm. Gornall & Sons.
Carpenter and joiner—*R. G. Hirst & Son.
Plastering and painting—*A. Critchley.
Slating—*Bellamy & Dagnall, Ltd.
Plumbing and glazing—*T. Howarth
(All of Bolton.)

Bradford.—For alterations to banking premises at Market-street, for Messrs. Barclays, Ltd. :—
*Michael Booth & Sons.

Bradford.—For reconstruction of premises corner of Kirkgate and Queensgate, for Messrs. Sykes & Rhodes :—
*W. Mason & Son, Ltd., Bradford.

Castlederg.—Parochial hall at Aughyarron :—
*Duffy Bros., Ltd.

Carrick-on-Shannon.—Vocational school, for the County Vocational E.C. :—
*B. M'Dermott, Carrick-on-Shannon £1,997 10

Chelmsford.—House for the Chief Officer of the Fire Brigade in Market-road, for the T.C. :—

F. J. French	£769
Trigg & Moore	698
Chandler & Son	695
W. W. G Parker, Ongar	694
Henry Potter	685
*David Marven	653

Chester-le-Street.—Extensions to the Isolation Hospital :—
*W. Norman, Chester-le-Street £7,294

Darlington.—Extensions to Training College Messrs. Joseph Potts & Son, architects, 57, John-street, Sunderland :—
*George Dougill & Sons, Chesnut-street, Darlington.

Devizes.—Four houses at Yard-lane, Bromham, for the R.D.C. :—

E. D. Butler, Bromham	£1,509
W. G. Hillier Brown, Littleton Panell	1,276
Flower & Sons, Rowde	1,229
A. J. Box, Bromham	1,210
C. Syms & Sons, Calne	1,205
*A. Mortimer & Sons, Broughton Gifford	1,198

Dunkeerin.—New vocational school, for the County Vocational E.C. :—
*Wm. Moran, Drumshambo £2,004

Edinburgh.—Building at Craiglockhart Institution, for the T.C. Mr. E. J. MacRae, City Architect, High-street :—
Excavation, brick and mason—*J. Cairn.
Slater—*R. Kelly & Son.
Glazing—*Cunningham, Dickson & Walker.
Joinery, carpentry and ironmongery—*T. Anderson & Co.
Plaster—*J. & W. McLachlan.
Painter—*A. Hutton & Son.
Plumber—*D. Blake & Co.
Heating engineering installation—*Underhill & Co.
(All of Edinburgh.)

Ellon.—Drill hall and headquarters. Messrs. D. Polson Hall, Rollo & Hall, architects and surveyors, 146, Union-street, Aberdeen :—
Excavation, brick and mason—*S. B. Russell.
Steel construction—*G. Bisset, Ltd.
Joinery, carpentry and ironmongery—*J. Blake.
Glazier—*W. Phillip & Sons.
Plumber—*J. Laing & Sons, Inverurie.
Plaster work, etc.—*J. Scott & Sons, Ltd.
Slater—*J. Durnin.
Electrical installation—*W. C. Bryce.
Painter—*W. Philip & Son.
(Remainder of Aberdeen.)

Freebridge Lynn.—Two pairs of cottages near Grimston-road, Gayton, and four pairs on Station-road, Great Massingham, for the R.D.C. Mr. H. C. Barrett, surveyor, Pleasant House, Gaywood, near King's Lynn. Quantities by the surveyor :—
Gayton houses—
*R. H. Spragg & Son, Grimstone, near King's Lynn £1,198 10
Gt. Massingham houses—
*W. Baker, Tottenhill, nr. King's Lynn 2,432 0

Falkirk.—Building, for the Falkirk and District Co-operative Society. Mr. J. Callander, architect and measurer, Royal Bank-buildings :—

Excavation, brick and mason—*D. Ramsay & Son, Laurieston.
Joinery, carpentry and ironmongery—*H. Bain, Larbert.
Slater—*W. & J. Hopper.
Plaster—*J. K. Miller, Ltd.
Glazier—*D. O'May, Ltd.
Steel.—*Redpath, Brown & Co., Ltd., Edinburgh.
Heating engineering—*Mackenzie & Moncur, Edinburgh.
Tile and terrazzo—*Diespeker, Ltd., Glasgow.
(Remainder of Falkirk.)

Glasgow.—Squash racket courts and pavilion. Mr. James Miller, architect, 15, Blythswood-square :—

Excavation, brick and mason—*P. & W. Anderson, Ltd.
Joinery, carpentry and ironmongery—*J. Cochrane & Co., Ltd.
Plumber—*R. Renfrew & Son, Ltd.
Plaster—*G. Rome & Co.
Heating engineering—*Ashwell & Nesbit, Ltd.
Electrical installation—*A. Robertson.
Roof tiling—*A. Mackenzie, Ross.
(All of Glasgow.)

Inverurie.—New housing scheme in Middlemuir-road, for the T.C. :—

Mason work—*A. G. Rennie, Brechin.
Carpenter—*J. Robertson, Oldmeldrum.
Plumber—*A. Smith, Inverurie.
Painter—*R. Gray, Aberdeen.
Plasterer—*P. McPherson, Inverurie.
Slater work—*C. Dickie, Turriff.

Keshcarrigan.—New vocational school, for the County Vocational E.C. :—

*F. M'Avinnia, Ballinamore £2,004

Kilkee.—32 houses at Church-road, for the U.D.C. :—

*P. C. M'Mahon, Ennis £9,040

Lanchester.—64 houses at Burnhope, 36 at Hamsterley, and 18 at Craghead, for the R.D.C. :—

*Direct labour.

Leadgate.—14 houses, for the U.D.C. :—

*J. Jeffcock, Lemington-on-Tyne £3,906

Leeds.—Alterations to shops and offices in Bond-street. Messrs. Kitson, Parish, Ledgard & Pyman, architects, Lloyds Bank-chambers, Vicar-lane :—

*Armitage & Hodgson, Ltd.

Leeds.—Reconstruction of premises for occupation as nurses' quarters by the staff of the Leeds Hospital for Women. Messrs. Chorley, Gribbon & Foggitt, architects, Park-place :—

*Wm. Irwin & Co., Ltd.

Liverpool.—28 tenement dwellings, Block "F," Eldon-street, Burlington-street scheme, for the T.C. Director of Housing :—

*W Hall & Son, Ltd., 60 and 62, Christian-street, Liverpool £12,967

Liverpool.—Removal of the existing hot water boiler and the provision of a new boiler at the north end of St. George's Hall, for the T.C. :—

*Lewis Hill, Liverpool £157

Liverpool.—81 tenement dwellings, blocks A1, A2, A3 and A4, Queen Anne-street schemes, for the T.C. Director of Housing :—

*Henry Boot & Sons, Ltd., Banner Cross Hall, Ecclesall-road South, Sheffield £33,136

¶London.—The following works contracts have been placed by the War Office during the week ended August 30 :—

Longmoor—alterations to drains—J. B. Edwards & Co. (Whyteleafe), Ltd., London, S.W.

Canterbury—garages—G. Lewis & Sons (Dover). Ltd., Dover.

Shorncliffe—conversion of stables into garages—J. J. Clayson & Son, Ltd., Folkestone.

¶London.—Tenders accepted by H.M.O.W. for the week ended August 30 :—

Holborn Telephone Exchange—alterations and additions—H. & J. Taylor, Canada House, Hither Green-lane, Lewisham, S.E.

Mount Pleasant Letter Office—supply, delivery and fixing of racking—J. Greenwood & Co., Ltd., 12-14, Arthur-street, E.C.4.

Newcastle-on-Tyne Central Telephone Exchange and Board of Trade Offices—internal decoration—C. H Grabham, 21, Blandford-street, Sunderland.

Rampton State Institution—erection of cottages and extension of workshop—Bernard Pumfrey, Ltd., Wintern Works, Carlisle-street, Gainsborough.

Burton-on-Trent E.E.—adaptations for unemployment assistance board accommodation—C. Hodges & Son, Ltd., Horninglow-street, Burton-on-Trent.

London.—Interior and exterior decorating Mandeville Houses, for the Finsbury B.C. :—

*A. H. Inns, Ltd., London £984

London.—First portion of Ebury Bridge housing estate extension scheme, for the Westminster City Council :—

		Time of Completion. Months.
J. W. Falkner & Sons, Ltd.	£87,066	18
Prestige & Co., Ltd.	86,763	15
Higgs & Hill, Ltd.	85,444	13
John Mowlem & Co., Ltd.	83,232	20
Albert Monk	82,534	18
Holloway Bros. (London), Ltd.	79,930	11
Gee, Walker & Slater, Ltd.	79,866	15
Hall, Beddall & Co., Ltd.	79,642	16
James Carmichael (Contractors), Ltd.	79,140	10
‡Humphreys, Ltd.	77,801	11(*a*)
Wilson Lovatt & Sons, Ltd.	77,777	15

(*a*) Will complete first block in seven months.

London.—New warehouse in Holloway-road, Holloway. Messrs. H. Seymour Couchman & Sons, architects, 520, High-road, Tottenham :—

Patman & Fotheringham, London ...	£15,417
Henry Knight & Son, London	14,675
Concrete Piling Co., Ltd., London ...	14,237
Wilson Lovatt & Co., London	14,220
Gray's Ferr Concrete Co., London ...	13,990
*Holloway Bros., London	13,546

Loughborough.—New office block in Derby-road, for Messrs. Genatosan, Ltd., Regent-street and Derby-road. Messrs. A. E. King & Co., L.R.I.B.A., architects, 18, Baxtergate :—

Builders.—*Thomas Barker & Sons, Loughborough.
Steelwork—*W. Richards & Son, Leicester.

Lytham St. Annes.—Concrete sea wall, etc., for the T.C. Mr. G. W. Lawson, Borough Surveyor :—

*Yorkshire Hennebique Contracting Co., Ltd., Leeds.

Manchester.—Offices in Great Ancoats-street, Ancoats, for Messrs. L. Lighthill & Co., Fawcett-street. Messrs. Broughton, Atkinson & Sons, architects, 37, Brown-street :—

*A. Cassel & Sons, Manchester.

Manchester.—Warehouse off Shude Hill, for Messrs. Marsden, Harcombe & Co., Cross Keys-street. Messrs. Ernest Ogden & Wylde, F.R.I.B.A., architects, Ridgefield :—

*Thomas & Jones, Ltd., Manchester.

Manorhamilton.—New vocational school, for the Leitrim Vocational E.C. :—

*Wm. Hazlett & Sons, Manorhamilton £1,914 6

Margate.—Extension of the Pavilion and Winter Gardens :—

*Rice & Son, Ltd. £24,942

Middlesbrough.—Extensions to the "Newport Hotel." Messrs. Kitching & Co., architects, 21, Albert-road, Middlesbrough :—

*W. Pearson & Son, Burn-road, West Hartlepool.

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Nantwich.—For the erection of 42 houses on the Wallfields estate, for the U.D.C. :—

*Fletcher & Son, Crewe.
(Subject to approval of M.H.)

Newcastle-on-Tyne.—New verandahs at the City Hospital, Walkergate, for the City Council :—

*R. Salkeld, 8, North Jesmond-avenue, Newcastle.

Newcastle-on-Tyne.—Coachbuilding works and offices in Claremont-road, for Messrs. Rington, Ltd. Messrs. Stephenson & Gillis, architects, 2, Saville-place :—

*W. Hall, Derwentwater-road, Gateshead.

Newcastle-on-Tyne.—Extensions and improvements to the premises of Messrs. Marshall, Clayton-street :—

*W. Milne, Manor-chase, Newcastle.

Oldham.—Extensions to the Public Assistance Offices in Rochdale-road, for the T.C. Captain J. Ashurst, Borough Surveyor :—

*J. Hartley, Chadderton, near Oldham.

Peterborough.—School in Fulbridge-road, for the T.C. :—

W. M. Freeman & Son, Oundle	£20,567
A. Pettitt & Sons, Ramsey	20,000
Thomas Measures, Dickens-street ...	19,643
J. Guttridge & Sons, Ltd., Park-road	19,289
John Lucas, Dogsthorpe-road	19,212
G. A. Campion, 315, Dogsthorpe-road	19,150
Fairchild & Maddocks, Williamson-avenue	18,991
John Cracknell, Ltd., Huntly-grove ...	18,886
John Thompson & Sons, Ltd., 165, Cromwell-road	18,753
J. W. Barber, 9, Church-street, Stanground	17,995
Jellings' Builders, Westwood Bridge	17,995
*Thomas Ellington & Son, Peterborough	17,403

Pontefract.—Additions at the General Infirmary, South Gate, for the Board of Management :—

*A. Gregory & Sons, Ltd., Glasshoughton, near Castleford.

Pontypridd.—Cubicle pavilion and nurses' home at Isolation Hospital, Tonteg, for the U.D.C. Mr. W. E. Lowe, architect and surveyor. Quantities are by the architect and surveyor :—

C. A. Seaton, Pontypridd	£5,314	8	9
Evan Jones & Son, Pontypridd	5,289	14	5
Evan James, Ystrad Mynach ...	5,236	19	2
Knox & Wells, Cardiff	5,100	0	0
F. J. Thomas & Son, Cardiff ...	5,070	19	5
*J. Lewis & Son, Caerphilly	4,998	0	0

Portadown.—New elementary school, for the County Armagh E.C. :—

*H. Laverty & Sons, Belfast £16,287

Preston.—Pavilion, offices, training quarters and a new stand with accommodation for 2,000 persons, for the Committee of the Preston North End Football Club, Ltd., Deepdale, Preston. Mr. D. Fazackerley, architect, Martins' Bank-chambers, Market-street :—

Excavating and brickwork—*J. Dillon & Sons.
Steelwork—*T. Blackburn & Sons.
(Both of Preston.)
(Estimated cost, £10,000.)

Rathdrum.—Boundary wall and gate piers at the Rathdrum Tuberculosis Institution :—

*L. Curtis, Cabra £2,640

Runcorn.—For (*a*) eight houses in Ellis-lane, and (*b*) four in Main-street and Pump-lane :—

(*a*) *Clough & Gaskell, Ltd. £2,650
(*b*) *Clough & Gaskell, Ltd. 1,330

Salford.—For (*a*) alterations and (*b*) strong room at 247, Chapel-street, for Messrs. Williams Deacons Bank, Ltd., 38, Mosley-street, Manchester. Mr. Chas. N. Taylor, A.M.S.A., resident architect, 44, Mosley-street :—

(*a*)—
Builders—*W. Thorpe & Son, Ltd.
Plumber—*G. Billington, Ltd., Salford.
Plasterer—*A. & S. Wallace, Newton Heath.
Masonry—*Mather & Ellis.
(*b*)—J. Bennett & Sons, Ltd.
(Remainder of Manchester.)

Salford.—Steel-framed building to cover a portion of the yard at the rear of the Central Car depot, Frederick-road, Pendleton, for the C.B. :—

*T. Blackburn & Sons, Ltd., Preston ... £1,462

Salford.—Transformer sub-station building in Coke-street, Higher Broughton, for the C.B. :—

*E. B. Jones & Rawlinson, Ltd., Salford £405

Sedgley.—42 houses at Upper Gornal, for the U.D.C. Mr. H. H. Griffin, architect, Estate Office, The Walk :—

Sabin, Young & Co., Walsall	£12,388
A. E. Greensill, Coseley	12,222
*Nathan Hyde, Claremont-road, Sedgley	11,970

Shipley.—Warehouse, for the Shipley Carbonising Co. :—

*M. Booth & Sons.

Stockport.—Offices in Chestergate, for the Halifax Building Society, Commercial-street. Messrs. Hinchliffe & Co., architects, Tower-chambers, Halifax :—

Builders—*R. Carlyle & Co., Ltd.
Painting—*J. Gibbons & Son, Ltd.
Plumbing—*J. H. Enion & Son.
(All of Manchester.)

Stockton-on-Tees.—External painting of 263 houses on Blue Hall estate and 378 houses on Primrose Hill estate, for the T.C. Borough Engineer :—

*—. Croft, Bishopton-lane, Stockton-on-Tees.

Thurles.—Improvements at the district hospital, for the Committee of Management :—

*J. Skehan, Thurles £13,902 0 6

Tynemouth.—New inn, for Messrs. Truman, Hanbury and Buxton, Jesmond, Newcastle. Messrs. T. A. Page & Sons, architects, 67, King-street, South Shields :—

*B. Peel, Ltd., East Mill Works, North Shields.

Wakefield.—20 houses in Potovens-lane, for the R.D.C. :—

Builders—
*C. H. Clark & Son £2,800 0 0
Joiner—
*J. W. Godwin 1,461 15 0
Plumber—
*G. L. Gibson 738 14 2
Plasterer—
*W. Newton 412 5 10
Slater—
*G. H. Clark & Son 389 0 0
Fences—
*R.D.C. (direct labour) 200 0 0
(Subject to M.H. approval.)

Warrington.—Extensions to premises, for Messrs. Tanner Bros., 25-29, Winwick-street :—

*T. F. Wallington, Warrington.

Warrington.—Garage and filling station in Arpley-road, for Messrs. E. Garland & Son, Ltd., Tower-buildings. Messrs. Harry S. Fairhurst & Son, F. & A.R.I.B.A., architects, Chancery-chambers, 55, Brown-street, Manchester :—

*F. Warburton & Son, Warrington.

West Kesteven.—Construction of reservoir and laying of water main at Sudbrook, for the R.D.C. :—

*H. Barr, Ltd., Nottingham £339 3 10

Wetherby.—Houses, for the R.D.C. :—

Four houses at Cliffords—*W. J. & E. Burns.
Six houses at Spofforth—*W. W. Stott & Son.
Two houses at Wighill—*J. Newis.
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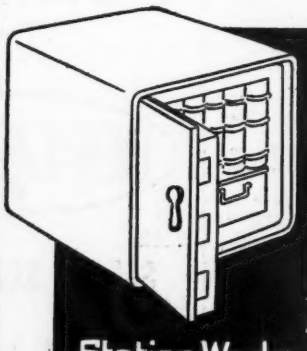
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